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THE

PRIMARY TEACHER,

A Monthly Magazine,

DEVOTED TO THE

Interests of Primary Instruction
in America.

WILLIAM E SHELDON, Editor.

◆

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THE

PRIMARY TEACHER.

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TRUE STORIES, AND HOW TO TELL THEM.

BY MRS. SARAH M. WYMAN.

I.

MOUND-BUILDERS.

Teacher.—How many of you have seen a mountain?

Twenty dimpled hands signal the reply.

Teacher.—Mary, what can you tell me about a mountain?

Mary.—It is a high elevation of land, generally very rocky, and sometimes mostly covered with trees.

Teacher.—When the land does not rise so high as a mountain, what is it called?

Julia.—A hill.

Teacher.—When less than a hill, what?

Julia.—A hillock.

Carrie.—A knoll.

Monroe.—A mound.

Teacher.—Yes, it is called by all those names. Who of you have seen a mound?

Hands rise slowly.

Teacher.—Do you know who built the mound you saw, Helen?

Helen was silent.

Teacher.—Who made the mountains and hills?

Helen.—God.

Teacher.—When a mound exists in that way, we say it is a ***natural*** mound, because it is found in nature. A mound is not rocky. The outside is regular and smooth. A hillock is uneven. A knoll is just a little hill, and sometimes on the very top of a large one. How many are sure they know where the State of Ohio is?

All are sure.

Teacher.—You may look on your map and see if you can find the town of Marietta. On what river is it, Louisa?

Louisa.—On the Ohio.

Teacher.—At Marietta, a mound became partly undermined by a little stream, and a silver cup was found in it, highly polished, and beautifully gilt on the inside. How do you suppose it came there?

No answer.

Teacher.—How many have seen isinglass?

Most of the class have seen large pieces of it.

Teacher.—From some mounds, large mirrors made of isinglass, have been dug out. Who do you suppose put the mirrors there?

No reply.

Teacher.—Nobody knows, children; but these and other things found in them, show that those mounds were built by men, and so they are called *artificial* mounds, because they do not exist in nature, like mountains and hills. What might we call the men who made the mounds?

John.—Men who built the mounds.

Teacher.—Or putting mounds first, what would it be?

Julia.—Mound-builders.

Teacher.—That is right, Julia, and we will henceforth call them Mound-builders. It is supposed the Mound-builders lived very, very long ago. On a mound at Marietta, there are trees eight hundred years old. The mounds must be as old as the trees growing on them, and nobody knows how much older. Then how many years ago must the Mound-builders have lived?

Horace.—Over eight hundred.

Teacher.—Yes, it is quite probable that some of them inhabited this country more than a thousand years ago.

Maurice.—How do they know the trees on the mound were eight hundred years old?

Teacher.—A very natural question to ask, Maurice. You might think it a difficult thing to tell, but it is not, for in the trunk of a tree a layer of wood is formed around the pith the first year of its growth; the second year another layer of wood around the first, and so on, as long as the tree lives; so that when cut off at the base, there are seen as many rings as the tree is years old. This is a very curious fact. You may not quite understand it now, but sometime I hope you will have an opportunity to examine the trunk of a tree thus cut off, and then you will see it all. Some of the trees on the mound in Marietta had eight hundred such rings. I'm glad you asked me, Clarence, for now you'll always look for the rings when you see a tree that's been sawed off. You may find Adams county on the map. In what part of Ohio is it?

Maude.—In the very southern part.

Teacher.—In that county is a mound representing an immense snake, over a thousand feet long. It lies along a bluff above the Ohio, and you can trace all the windings of a snake, and in the open mouth, it seems to hold an egg, and the egg itself is a mound one hundred and fifty feet long.

Albert.—Does anybody know what they built it like a snake for?

Teacher.—No, Albert; nobody knows. Sometimes there are many small mounds arranged in a straight line, and extending for miles. There are supposed to be over a thousand mounds in the State of Ohio. Then they are scattered all along the valley of the Mississippi, and what is more wonderful still, they are not all of solid earth, but some of them have chambers within them, and others show that bricks were used in building them, and also stone. Then there have been found in them tools, such as axes, knives, and chisels; also ornaments made of silver and copper. You may find the State of Mississippi; principal city in the southwestern part?

Thomas.—Natchez.

Teacher.—Eleven miles from Natchez was a group of mounds, apparently erected for purposes of defence. One of these was thirty-five feet high (compare this height with some known object), and on the top of it rose several mounds, and in the center of the summit was the mouth of a passage underground, leading to a spring not far distant.

Martin.—Did they have horses to draw the earth for the mounds?

Teacher:—We have no reason to suppose they had either horses or oxen. How then could they have carried it?

Martin.—In wheelbarrows.

Teacher.—But do we know they had wheelbarrows?

Monroe.—Then they must have carried it in baskets or in bags on their backs.

Teacher. — But only think how much they must have used. Sometimes a high embankment is found fourteen miles long, evidently the work of the Mound-builders.

Sarah.—Were there not a great many of them?

Teacher.—Yes, there must have been, and that is about all we know, for they left no books, not even a written line.

Harry.—Weren't they Indians?

Teacher.—Probably not, Harry. The mounds, you know, were built five hundred years before we know anything about the Indians, and the habits of the Mound-builders must have been very different from theirs. The Indians are not industrious and persevering enough to build such great works. Besides, there were many things about the mounds that showed mechanical skill, and a knowledge of certain things which the

Indians never possessed. The mounds were exact, — either a circle, a square, or octagon (drawing these figures on the board), and several squares measured exactly one thousand and eighty feet on a side, showing the Mound-builders had some definite standard of measurement. Vases were also found in the mounds, gracefully ornamented. These must have been made by the Mound-builders, or people living in their time. The Indian understands no arts of that kind. In some of the mounds skeletons have been found, showing they were sometimes built for burial-places for the dead. But the skulls were very different from the skull of the North American Indian. So we have no reason to believe the Indians were descendants of the Mound-builders.

There are books where you can find much more about the Mound-builders; very interesting books, too. So I will leave the subject for you to read about. And now can you tell me what an account of things done in a country is called?

One little fellow ventures upon the word, History.

Teacher.—That is right, my boy. In what country were the Mound-builders?

William.—In the United States.

Teacher.—Then you are learning, what?

William.—History of the United States.

Teacher.—Yes, and you may make a history for yourselves. Bring blank-books to-morrow, and put on the first page, what?

Maria.—"History of the United States."

Teacher.—And on the second, "Chap. I. — Mound-builders." You can hardly remember all we've said, and so I'll tell you what we'll do. Each one write on slate or paper questions upon to-day's lessons, all you can think of and answer, and bring them into the class to-morrow.

◆

GEOGRAPHY.

BY MARY E. BADLAM.

I.

I. *Size* of the Earth.

Let the children pretend to take a walk through the streets or roads around the school, and think how long it would take them; then think of the adjoining streets, and of others joining these, and the space covered by them, until they have some idea of the size of their own city or town, and the time it would take them to walk through it.

Then lead them to talk about other towns and cities joining theirs, and of far-away cities of which they have heard, as large and oftentimes larger than their own, and they will readily see that the earth must be *very, very large* to hold all these.

II. Division into Land and Water.

Question them about what cities are built on, and you will get various answers, as dirt; land; earth.

Let them describe the land.

It is solid; always the same; never changing; immovable.

Let them in imagination take a walk over the land until, by-and-by they come to a place where they can go no farther; where they cannot take another step. (If they cannot think readily what it is, tell them what we see upon it.)

From their own knowledge let them describe it, and then compare it with the land.

The land is *solid;* the water is *liquid.* (If they do not know the word *liquid,* give it to them.)

The land is immovable; the water is always in motion. The land is always the same; the water changes in appearance every minute.

Show a picture of land and water, and let the children decide which is land and which is water, and give their reasons.

III. What we *obtain* from Land and Water.

1st. From the outside or *surface* of the land.

	Plants	*and*	*Animals.*
For	Food,		Food,
	Clothing,		Clothing,
	Fuel,		Light,
	Building materials.		Labor.

(Let them give examples for each one.)

2d. *Under* its surface. Building-stones, metals, and coal.

3d. From the *water.* Fish, salt, sponges, and coral.

IV. *Shape* of the Earth.

Question them about what they can see in the sky, (sun, moon, and stars) why they look so small, and what they think the shape is.

Give the words *sphere* and *spherical;* globe and globular.

Let them mention other spherical objects.

Tell them the earth is nothing more nor less than a star; and perhaps, if we could stand off and look at the earth, we should find it shining and giving light just like a star.

Throw a ball in the air, and let them imagine how it would look if it stayed there with the air all about it.

Lead them to think of toy-balloons, and how they look sailing through the air. This is the way with our earth: it is like an immense ball held or suspended in the air.

Show a globe, and impress on the children's minds that it shows the *shape*, and not the *size* of the earth.

Show, again, a picture of land and water, and then show land and water on the globe. Keep them using the globe until they can point to either readily.

V. *Air* around the Earth.

Let them tell what is around the earth, and why we need it; that it is necessary to life; and then tell them the higher we go, the thinner it is; and if we go high enough we get to a place where we cannot breathe; where we would die.

Tell them that wind is nothing but air moving rapidly, or air in motion. Speak about the clouds collecting the moisture, and then sending it down again as rain and water upon the earth.

VI. The Earth a *magnet.*

Show the children a magnet, and let them use it, noticing how the magnet draws or attracts the steel, or anything with steel in it.

Let anything fall from your hand; throw a ball into the air, and see how soon it falls to the ground.

Tell them the earth draws the ball toward it just as the magnet drew the steel, only with a great deal more force.

It is a magnet, and by its power of drawing or attracting keeps us from flying away and leaving the earth altogether. If it were not for this power we would not be able to touch the earth at all.

VII. Division of the Land into Continents and Islands.

Using the globe again, let the children point to land and water.

Let them point out the *large* bodies of land, and tell the number.

Give them the name *Continent*, and let them give the definition from its position on the globe. "A large body of land *entirely* surrounded by water."

(All these points should be written on the board as soon as they are obtained.)

Lead them to notice other bodies of land much smaller, and compare them with the Continents. They will find they are entirely surrounded by water, like the Continent, but are much smaller.

Give them the name "*Island*," and let them give the definition, "A *small* body of land entirely surrounded by water."

Show a picture of an island.

VIII. The Ocean.

Let them point to the water on the globe, and tell how it is situated with regard to the land; that it is *around* the land, or *surrounds* it.

Question them about the taste, and why we do not drink it.

Let them tell the name it is called by. Then get the definition from them, and write it on the board. "A great body of salt water, that surrounds the land."

Let them give again some of the uses of the Ocean.

BOTANY FOR "LITTLE PEOPLE."

BY MARION.

III.

Ere the summer months have passed away, and the autumn brings the teacher and scholar together again, a gradual change has passed over the face of nature.

The watchful child who has enjoyed the flower lessons, and who took great pleasure in naming the parts of each new one, has become somewhat confused. Some morning you may request the school to bring flowers in order to continue their lessons, and many inquiries will be made before you can begin the work of the hour. One, perhaps, has brought an aster, and his thoughts take somewhat this form:

"Teacher, I thought you taught us all the parts of a flower, but I cannot tell about this one. If the green is the calyx, and the blue the corolla, what are all these yellow things in the center? Are they stamens? I do not see any pistil."

This will introduce you at once to their difficulties, and great care should be exercised that the autumn flowers may be read and understood by each little one. It would not, of course, be practicable to enter fully into an explanation of the orders, especially the Compositæ, always difficult even to the mature student, but still something can be taught.

With the aster, explain to them that what they call a flower is not truly so, but a head or group of flowers. Show them that the green is not a calyx, but a row of bracts, which surrounds the head; that the blue and yellow portions consist of many flowers, called respectively ray and disk flowers. Let them attempt to count the almost innumerable number of blossoms, until their wonder and interest is aroused If possible, let your pupils have the pleasure sure to follow from a glimpse of one of these tiny flowers through a microscope. A simple one will answer your purpose and will be a never-ending pleasure to the children, not only in this but in other studies.

In teaching botany to young children, the aim is not to consider fully any branch of the subject. So far as the lessons go they should certainly be absolutely correct, but the more difficult portions must be omitted altogether. Your purpose should be to cultivate in the children the powers of observation, in order that they may see much which, left to themselves, they would fail to notice, and which lies hidden, perhaps, to a great proportion of the world.

With this in mind, let us, at this point, give attention to some of the lower orders of vegetation. Lead the children, by a device of your own, to the discovery that grass blossoms. Perhaps you have talked together of a large number of flowers. Ask them to bring you one they have not studied previously. If you do not secure the one desired, excite their curiosity. Tell them that this flower is very common, and (if not a city school) you can add that you are sure it grows in each of their yards. Perhaps even then it may only be brought by mistake, gathered with some other flower. Their interest having been aroused in this way, they will be glad of a simple explanation of the stem, leaf, and flower of a grass. As the aim is to call attention to some of the simple facts, without giving time for study, the technical terms will be better omitted in these explanations.

In somewhat the same manner, attention may be called to the mosses. In my childhood, I never knew that the soft, pretty moss, that I was fond of gathering, had anything analogous to blossoms. I can remember picking off the "little brown things" that I sometimes found among its foliage, thinking they detracted from its beauty. It was with a thrill of pleasure that I learned, years later, that the moss had its visible organs of propagation. Here, and with the grasses, a microscope will be of the greatest value, although diagrams on the board may aid to explain the structure of the plant.

Ferns must not be forgotten. While they have no flowers to attract, their gracefulness has probably made them favorites of the children, and they will be glad to learn a little more about them. It may be well to give them the term *frond* instead of the word *leaf*, that they will naturally use. Explain to them that in order to have new ferns each year, there must be something to take the place of seeds, and ask them where they suppose they grow. Already the little brown spots on the back of the frond may have caused questions, and you can tell them very simply that in these are inclosed the spores that take the place of seeds, and which drop and plant themselves. In order that, as always, the children may be led to investigate for themselves, have different kinds distributed. Then they can be led to discover that the fruit dots are not always in the same place on the back of the frond; sometimes along the mid-rib and principal veins, sometimes under the edge which rolls over them, and usually only toward the top of the frond. Species may be found where the fruit-dots are collected on a separate stalk. Thus may interest be excited in the simple facts about these less-studied plants.

As the flowers begin to disappear, their places will in part be filled by the brilliant-colored "autumn leaves." This will afford an opportunity for a review of some of the earlier lessons in this study. At the same time, a conversation about the change from the green of spring-time to these varied tints, will give new interest to "leaves."

> "But you are lovely leaves, where we
> May read how soon things have
> Their end, though ne'er so brave;
> And after they have shown their pride
> Like you awhile, they glide
> Into the grave."

ZOOLOGY FOR THE LITTLE ONES.

BY CLARABELLE GILMAN.

XI.

THE SNAIL.

The large French edible snail is the best species with which to teach this lesson, but, as it is difficult to procure, our garden-snail or the large pond-snail will probably have to be used. It is said that the slug, which is just like the snail except that it has no external shell, and possibly the snail also, can be obtained at almost any season of the year by setting a trap in a greenhouse. This trap consists of a box filled with moist bran, which attracts snails as cheese does a mouse. An easy way to keep them after they are caught is in flower-pots or boxes partly filled with earth, over which moss has been laid to retain the moisture.

Our snails, the European ones, have been kept in a cool place, and their shells are closed up with a layer of mucus. We study the shells first. It is an advantage to do this before the snails come out, so that the children's attention will not be distracted by their motions.

"Can you tell me the shape of the shell?"

"It looks like a horn curled up."

"Which part of the shell do you think was made last?"

"The part around the opening."

"See if you can find any lines running around the opening. If you can, trace them back and see where they will lead."

"They go up to the point on top."

"That little point on top we will call the apex. The apex is the tiny shell that the snail started with when it was a baby. Now let us follow the lines on the shell back again from the apex to the opening, and see how it has grown to be as large as it is now."

This part of the lesson may be made very interesting by having some snails' eggs or very young snails, showing the little bag-like shell with only a very short coil. The children will be delighted to gather snails, and watch the development of their eggs. In spring and summer great numbers of the eggs of the pond-snail may be found on the under surface of the leaves of water-plants in jelly-like masses, in which the eggs look like little dots. The shells of young snails are transparent, and the body can be seen inside, and its growth, and the gradual coiling of the shell can be watched.

We notice that the opening or aperture of the shell points toward the right. Most shells have the aperture on this side, so when we find one opening toward the left, we will be careful to preserve it.

"But where is the snail? The shell is all stopped up," cries little Carrie, eager to come to the animal himself.

"That coating that closes up the opening of the shell, we might call the snail's storm-door. He makes one every winter out of the mucus from his foot. When the cold weather comes, he hides away under the roots of a tree, or under a log or stone, and closes his shell with this door, which is sometimes made of as many as four or five layers of mucus. Then he goes to sleep for the winter. Most of the water-snails have a door all the time, that they can shut whenever they please."

"How can the snail open his door when he wants to come out?"

"He breaks it with his foot. Now before we can see what part of the body makes the shell, we must coax them to come out."

We drop our snails into a bowl of warm water, and in a very few minutes they are pushing out, foot foremost. Holding them upside down to watch this interesting process, we see the mantle, as a fleshy rim, surrounding the aperture. This builds the shell, just as the mantle of the clam does.

"What makes this hole in the mantle?" "What makes it keep opening and shutting?"

"One question at a time. This is the snail's breathing-hole, and it leads into a sac in the mantle that has bloodvessels in its sides. When the snail opens his breathing-hole, he fills this sac with air that goes through the walls of the blood-vessels and purifies the blood. Then he presses the sides of the sac together and drives out the bad air that has come from the blood."

"My snail is putting out two horns with black dots on the end of them."

"Those are called tentacles. Are there more than two tentacles, Gertrude?"

"There are two little bits of ones, besides the long ones."

"The land-snails have four tentacles. We must examine the pond-snails, and see how many they have. What do you think these black dots on the tentacles can be, Fred?"

"Are they his eyes?"

"Yes. How many has he?"

"I think he has only two, for I can't see any on the short horns."

"Then what does he use the short tentacles for, Bessie?"

"I think they are feelers."

"Now watch the snails as they crawl, and see them use their tentacles. Touch the long ones, and see what happens."

"They draw them in."

"Touch them again, and watch the eyes."

"There's a black thread in the tentacle that pulls the eye down inside."

"That black thread is the lining of the tentacles, that has muscles in it to pull the end of the tentacle in. These muscles draw it down inside just as we turn the finger of a glove when we pull it off in a hurry.

"What shall we call this broad part of his body that the snail walks on, Daisy?"

"Is it the foot?"

"Yes. It is not much like the foot of the clam, is it? But it is not used like that, so it needs to be of a different shape. Watch the snails as they crawl on your pieces of glass, and see if they lift up the whole foot at once."

"He moves it a little at a time."

"You can see it move in little waves. The foot is a large sucker. If you let a snail crawl on your finger, the foot will fasten itself so closely to the skin that it will be quite hard to push it off. When the snail is crawling, he lifts up a little of his foot, stretches it out, and fixes it in another place, then draws up the rest of the foot after it. So by lifting first one part of his foot and then another, and pulling the rest along, he gets over the ground in his snail-fashion."

"What makes the glass look so sticky where the snail has been crawling?"

"Inside his foot are bags, where the slime or mucus that you see is being made all the time. In the bottom of the foot, near the head, is a very small opening out of which mucus is always coming when the snail is crawling.

"What is it for?"

"Suppose you should put a snail on some dry earth or gravel. The bits of stone and earth would stick to him and irritate his soft foot. But he throws out a great deal of mucus. Can you see what good that does?"

"It makes a smooth covering over the earth, and keeps it from hurting him."

"If you examine the earth in the box where I keep my snails, you will see it looks as if it had been glazed over. Snails and slugs are sometimes very troublesome to gardeners, because they eat up the plants; and a good way to kill them is by sprinkling dust or ashes in the places where they are likely to be. They throw out so much mucus, as they try to get the dry particles off, that they soon spend all their strength and die of weakness."

"Does the shell ever come off?"

"No. The shell is part of the snail. People sometimes say that the snail carries his house on his back. But the shell is not his house; it is part of himself. If we could take off the shell, we should find the body coiled, too, in the same shape.

"Now we will feed the snails with some of this lettuce that they are so fond of. We must watch their mouths closely while they are eating."

"Something brown keeps coming out of his mouth."

"Can you see what he does with it, Alice?"

"He cuts off pieces of the leaves."

"That brown thing is a hard jaw with sharp ridges on it. He uses it as a knife to cut off his food, that he grinds in a curious way by means of teeth on his tongue. A strange place to have teeth, is it not? These teeth point backward when the tongue is drawn in, but when the snail is eating, the tongue is pulled forward by muscles, and the teeth are made to stand up straight. Then as the tongue works backward and forward, these teeth grind the food against the hard jaw that you see, and also against the gristle that lines the upper part and sides of the mouth. The teeth are very small, and a great many of them are worn out every time that the snail eats. So there is a little pocket behind the tongue where new teeth are growing all the time, and when the old ones are worn out, the new push forward and take their place."

"I don't see how they can push out."

"The new teeth come forward just as a new nail does on your finger. You may cut off your nail close to the end of your finger, and in a few days it will be just as long again. The new part that is growing all the time at the inner end of the nail has been pushing its way out. The teeth on the snail's tongue grow forward in the same way.

"Before we close our lesson, I think you would like to know what snails are good for. In Europe these large ones are very common, and do a great deal of mischief by eating the grape-vines; but the people eat the snails, and so make them of some use after all."

PRACTICAL LESSONS IN THE KINDERGARTEN.

BY MRS. MARIA KRAUS-BOELTE.

XVIII.

PERFORATING.

The occupations of the kindergarten have a far higher aim than merely to develop dexterity of the hand, as is generally done, thus degrading them to merely mechanical work, because the right principle and aim is either not understood, or left out of sight. In the first occupation, — perforating, — simply the point is treated; its aim is to produce that which is beautiful by the child's own activity, and mostly by its own invention. By and through this occupation, if correctly carried out, the child becomes accustomed to see sharply and accurately; it learns to judge distances and directions, and acquires neatness of execution and lightness of the hand. Also the intellectual faculties are called into action while perforating the various forms.

A love for what is beautiful undoubtedly also increases the love for the good, for they usually go hand in hand; and a nature keenly sensible of the beautiful, sees beauty in all the great Creator's work, enjoying much that others pass unnoticed. It is thought to be very essential that the cultivation of the æsthetic nature should begin in childhood, to increase happiness and make the whole life purer and better, and all that tends toward this should, therefore, be welcome in the child's training.

The occupation of perforating has been much abused because of the injudiciousness of the kindergartner, and her non-understanding of how correctly to carry it out; and in many cases the eyes were strained too much. Whereas, when in the proper way carried out under the guidance of intelligent, judicious persons, perforating has been turned into a beneficial educational means of occupying the child, strengthening the eyes rather than otherwise. This occupation must not be given at too early an age, nor too frequently, nor ought it to be carried on for longer than ten to twenty minutes at a time. Also the child should be in the right position, and the light should never be behind the little worker, who, by conversation, should be induced to look up from time to time, and rest the eyes.

In regard to how this occupation should be carried out, the course, as indicated in the last of the gifts, the embodied point, will give the proper key. The material consists of a piece of card or paper, enveloped in a thin piece of paper, which is covered on one side with a network of square lines of about a quarter of an inch, a perforating-board or pad made of felt, or blotting-paper folded about as many times double as to allow the needle to sink easily into it. The needle or pricker should be of the thickness of a strong darning-needle, inserted into a substantial wooden handle. The material in itself gives opportunity for making remarks of an instructive kind. The intersections of the lines of the square net-work are at first only to be considered for children five and six years old; for with this occupation, as with all others, we begin with the most simple, and gradually advance to the more complicated forms. Commencing with the point, one perforation, the child by degrees joins these points or dots into lines, each additional dot conditioning the direction of the line. Much forethought and attention is needed on the child's part; for a perforation *once* made into the wrong place cannot be effaced; thus the habit of attention and exactitude takes root. The habit is gained, *to think before action.*

In the gifts the different parts used for making forms were tangible, moveable, and could be joined or placed separately, shifting them from one form to another. In perforating, this is different. Lines are only indicated by little punctures in the paper, which cannot be shifted or changed at will, when once made. There seems to be a sort of fascination as the needle goes through the paper, and the work will be raised many a time to see the light shine through the little holes, while the "stars" are admired.

Perforations, grouped together, made only on the intersections of the lines, are carried out in the vertical and horizontal directions; slanting directions follow, and last of all curved lines. The network serves the child as a guide for eye and hand in making the different lines, and joining these to outline-forms. When the work is completed, the paper on which is the network is removed, and the child finds the work duplicated. Whilst perforating, the children have to count continually.

This preliminary course, as used in our kindergarten, is different from the one usually carried out in other kindergartens, although strictly in accordance with the principles found throughout the Gifts and Occupations. It is the outgrowth of twenty-five years' practical work we did, with children of different nationalities' in the kindergarten. The work is of such a practical kind that it will be difficult to describe it in words merely, without illustrations; however we will try, in future numbers.

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LANGUAGE NUMBER LESSONS.

BY ANNA B. BADLAM.

V.

Arrange on the table envelopes (one for each child of a division), each holding 10 pasteboard counters. Send a division to the table, with slates and pencils. Direct each child to place 2 counters on his slate, just as you do on yours; when this has been done, place a second row of 2 counters under the other.

"Children, count as I do: '2 counters, 4 counters.'" "Jennie, how many counters in the first row?" "In the second?" "How many rows of 2 have you, John?" "Two 2's are how many, Mary?" "How many times have you placed 2 counters?" "Tell me twice 2."

"Children, place another row of 2's under the others." "Helen, how many 2's have you now?" "How many rows of 2's have you, Frank?" "How many times have you placed a row of 2 counters?"

"Tell me three 2's." "Tell me 3 times 2." "Count as I do: '2 counters, 4 counters, 6 counters.'" "I will call mine soldiers: '2 soldiers, 4 soldiers, 6 soldiers.'" "Leslie?" "2 eggs, 4 eggs, 6 eggs." "Glenn?" "2 cherries 4 cherries, 6 cherries."

Proceed in this way with "2, 4, 6, 8," and "2, 4, 6, 8, 10." Testing the children's understanding of what is meant by four 2's, 4 times 2, five 2's, five times 2.

Write on the board $2 = 2$; $2 + 2 = 4$; $2 + 2 + 2 = 6$; $2 + 2 + 2 + 2 = 8$; $2 + 2 + 2 + 2 + 2 = 10$. The children reading "one $2 = 2$; two 2's $= 4$; three 2's $= 6$," etc. This latter exercise to be copied upon the slates.

Call the children's attention to the fact of how much slate-room this covers, and how much time it consumes; tell them there is a shorter way, which will be chosen in a later lesson. For instance: Placing two dots on the board, thus, . . "How many dots did I make?" "How many times did I make two dots?" "Once." "I write it this way," "$2 \times 1 = 2$" (reading from *right* to *left*), placing a second row of two dots. "How many times have I two dots?" "Twice." "Yes, I write it this way, '$2 \times 2 = 4$.'" Placing a third row of dots, "Now how many times have I two dots?" "3 times." "This is the way I write it," "$2 \times 3 = 6$."

Proceed in the same way with $2 \times 4 = 8$; $2 \times 5 = 10$, being particular to have the children read from *right* to *left*, as it is "4 times 2," or "3 times 2," with which they are working; *not* "2 times 4," or "2 times 3." The legitimate meaning of '$\times$' being "multiplied by," we have no authority for reading the formula $2 \times 4 =$ as "2 times 4," since it expresses **2** taken **4** times; hence the work on the board should be written and read $2 \times 1 =$; $2 \times 2 =$; $2 \times 3 =$; $2 \times 4 =$; $2 \times 5 =$; (from right to left, "once 2, twice 2, three times 2"), etc.

"Fannie, bring me the large pin-ball." "You may pull up 2 pins, just once." "Jamie, write once 2 on the board." "Chester, take the pin-ball; have two 2's." "How many times have we 2, children?" "Florence, write 'twice 2';" "Milly, take three 2's, or 3 times 2;" "Fred, write '3 times 2;" etc.

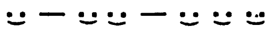
Sketch rapidly on the board something to represent the framework of a kite, as . "John, if you make yourself a kite this shape, how many sticks will you need?" "Write on the board how many times you will use 2 sticks." "Bennie, make a kite for Willie and one for yourself; how many sticks will you need?" "How many times 2?" "Bertie, you may write on the board how many times he needed 2 sticks."

Sketch wave-lines, etc., to represent flying birds. "Count the wings, children." "One bird has 2 wings; how many will 2 birds have?" "4 birds?" etc.

Procure from the toy-store small tin pails (about two inches high, they may be bought for 1 cent each). Place 5 pails before the class. "This morning, children, we will make lemonade; these little wooden beads shall represent the lemons." "We will allow 2 lemons for each pailful." "Lizzie and Minnie may come; each make a pailful of lemonade." "How many lemons have you used?" "If it takes 2 lemons for 1 pailful of lemonade, how many lemons will it take for 2?" etc.

"How many eyes has Davie?" "Willie?" "How many eyes have both?" "Fannie has 2 ears, Katie has 2, and Louisa; how many have all three?" "There were 4 little boys, each boy had 2 pockets, how many had they all?" Question in this way, sending a child to the table, or have him use his pin-ball if he does not know.

Again, with the children at the table, each child having his envelope, direct the children to arrange their counters thus, : : "How many horizontal rows have we?" "How many in each row?" "Three 2's are how much?" "Three times 2 are how much?" "How many vertical lines are there?" "How many counters in each?" "Two 3's are how many?" "Twice 3 are how many?" "Read across the rows." "Three 2's are 6." "Read down the rows." "Twice 3 are 6." Teach in the same way four 2's, two 4's, five 2's, two 5's.

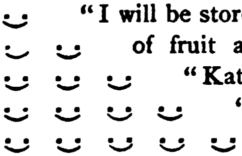
Arrange on the board rows of dots, as, . . — . . . . — . . . . . . , etc. "Children, we will find groups of 2's, this morning." "Katie, draw a little line under all the 2's you can find in the 1st line, now under the 2d, the 3d, etc. The result being, 

"Repeat with me, 'one 2 in 2, two 2's in 4, three 2's in 6,'" etc. "Sammie, take the ball-frame, move 4 balls." "Fred, separate them into groups of 2's." "Eddie, move 8 balls." "Bertie, make groups of 2's," etc. Expressing the work on the board; 2 ÷ 2 =; 4 ÷ 2 =; 6 ÷ 2 =; etc., reading from *right* to *left*, as in multiplication.

When the signs ×, ÷, are understood, arrange on the board little examples, as 2 × 3 =; 2 × 5 =; 5 × 2 =; 6 ÷ 2 =; 6 ÷ 3 =; 4 ÷ 2 =, etc.

Call out a division, each child having his pin-ball ready. "Mamie, take three 2's, or 3 times 2." "Sammie, take five 2's, or 5 times 2." "Georgie, take two 5's, or twice 5." "Helen find how many 2's in 6," etc.

Arrange on the board dots or lines, to represent pennies, thus:



"I will be storekeeper this morning, children. I have all kinds of fruit at 2 cents a piece; who would like to buy?" "Katie?" "Show us which row of pennies is yours." "You have how many pennies in your row?" "6 pennies." "What will you buy?" "Apples." "You shall pay me 2 cents for each apple; now how many can you get for your 6 cents or pennies?" Katie hesitates, and is told to take the pointer and find a group of 2 pennies in her row. "How much will it buy?" "One apple." "Find another group." "What will that buy?" "Have you any more pennies?" "What can you buy with them?" "One apple?" "How many apples can you buy for 6 cents at 2 cents apiece?"

Max chooses the row with 10 pennies, and finds he can get "5 peaches at 2 cents apiece." While Fannie tells us, she can get "4 oranges for 8 cents, if she pays 2 cents apiece for them."

OUR GREAT HOME.

[*Lessons Preparatory to the Study of Elementary Geography.*]

BY KATE L. BROWN, WAKEFIELD, MASS.

II.

What the children saw on their walk.

Teacher.—How many of you can tell anything about our walk of yesterday? (Every hand is raised.)

T.—Where did we go first, Annie?

Annie.—We went down Poplar street to Willow, and when we came to the woods we got over the wall and climbed "Highty." ("Highty" is a famous hill near the school-house.)

T.—Who will describe the climb? Mabel, you may begin.

(Mabel, a little roly-poly girl, begins to laugh as her name is called.)

Mabel.—I can tell about myself. It was a hard climb for me. I got all out of breath, but it was a lovely climb, too. The grass was full of grasshoppers, and every step we took they flew up all around us. Some of the girls screamed. I did, too. (There is a general laugh.) But the sweet-fern smelled so good! The trees grew thinner and further apart, until there wasn't any, and when we got to the top, such a lovely view! (Here Mabel pauses, quite out of breath.)

T.—Claud may go on. (Claud, the "artist-soul" of the class, eagerly resumes the description.)

Claud.—When we got to the top, we all sat down on the grass and rested. We could see the Harbor very plainly, and the water was *so* blue! I saw several white sails, and there were little bits of clouds all around the edges of the sky. We could see hills, too, looking in one direction, and mountains very far off. The hills were very dark blue, but the mountains were very light.

Guy.—After we got rested, we started down the other side, and found such a nice place. We found a little spring running out from under a rock, and a little brook ran from it. You said, Miss Russell, 'Let us see where the brook goes.' Oh, such fun as it was! It was such a little thing, with a narrow channel; but it grew wider as we went down.

T.—What did we call the land on each side of the brook?

Maud.—You told us that when we walked in the direction of the water's flowing, the land on the right-hand side was the *right bank*, and on the left hand was the *left bank.*

T.—What did we call the earth over which the water flowed?

Ernest. — It is 'bed,' isn't it? We sing, in 'Merry Brook,' 'Ripple o'er your sandy bed'!

T.—That is right, Ernest. Who will go on? You, Adèle.

Adèle.—In one place there was a great rock in the bed, and the water fell over it,—splash! down below. It was a wee waterfall. Teacher, you said it was just as much of a waterfall as Niagara was, even if it was so little. In one place the water dashed up, then down and round, and you said it was a rapid.

Here France's hand suddenly goes up.

France.—O teacher! I've seen rapids. It was on the St. Lawrence river. We went down them in a steamboat. It made me afraid; I hung on to papa.

T.—How did it seem, France?

France.—Why, at first we went up, then it seemed as if we were going to slide off into the air, then we went down.

T.—I have some pictures here of the St. Lawrence rapids that I want you to look at. [The teacher passes round several photographs which are explained and talked over.] Bertram resumes.

Bertram.—When we got down into the field, our brook ran into the Willow Brook. You said that the place where it ran in was called the mouth. That's funny! a brook to have a mouth.

Harold.—We went by Willow Brook until it joined the river, and there was another mouth. When we sat down in Mr. Harvey's summer-house, to rest.

T.—Where was the summer-house?

Harold.—On a little, narrow piece of land that ran into the water. You called it a 'cape,' and it *was* a little one.

T.—Had any of you ever seen a cape before?

Ruth.—I have seen Cape Ann. My Uncle Granville has a cottage right on the 'jumping-off' place.

Austin.—We went to grandpa's, on Cape Cod, last summer,

Dolly.—I saw a cape once near Newburyport, a little one,—only the land was very high, not flat like this.

T.—Some capes are just like that. Here is a picture of Cape Horn, on the southern point of the great country south of us. See, it is only a great, black rock, rising hundreds of feet above the ocean. And such a wild place! Great vessels always have a hard time going round the 'Cape.' It is stormy there most all the time, and many ships are dashed to pieces against the great rocks.

Daisy (seriously).—It looks like a bad, bad place. I'm glad Massachusetts is not like that.

T.—What was there in the river opposite the cape, Lilian?

Lilian.—Lily Island, where we went for a picnic, last summer.

Marian.—I went down to Nantucket, with Uncle Harry, last summer. That is a big, big island.

T.—I know of an island bigger still. Our little Elsie came from there.

Bessie.—Elsie came from England. Is England an island?

T.—Yes, the ocean is all around the big island of which England is a part. We have islands that are very large, and islands no bigger than the one I saw Harold and Bertram making in the brook one day. Tell me how you made it, Bertie.

Bertram —Why, we found a place where there was a big stone in the brook. We piled on little stones and gravel until it looked like a real island.

T.—To-morrow I shall ask about the things you can see starting from here and going to the depot. Let us put on the board the things we have seen on our walk.

Through the combined action of teacher and pupil the following list is made:

Spring.
Brook.

River.
Cape.
Island.

Bed.
Banks.
Mouth.

Flat.
High.

Right.
Left.

◆

THE FLAXSEED.

BY MRS. L. P. HOPKINS.

In all the little glasses on the table,
Grow pretty flax-plants, from seeds so brown;
And as I look it seems some wondrous fable,
The fair green shoots above, the rootlets down.

Was it all packed within that tiny casket,
The polished oval seedling lying there?
Did every still seed hear its Maker ask it
To shoot out beauty to the light and air?

Yes, it heard God's voice; it rose obeying,
Doing whate'er He said with heart sincere.
It did not stop for doubt or shy delaying,
But tried and tried till leaf and bloom appear.

So, little children, watch your shoots all growing,
Down to the water, up into the air;
God asks you, like the flax-flower, to be showing
Your sweet obedience to His love and care.

To Subscribers.—The date with your address indicates the time to which your subscription is paid. The **Primary Teacher** is sent until ordered to be discontinued, and an order for discontinuance can receive no attention until all arrearages are paid. Subscribers should remit by P. O Order, or by registered letter. All communications should be addressed to **Primary Teacher**, 16 Hawley street, Boston. Subscribers whose orders are not promptly attended to are requested to repeat the order. Postals and letters should always state the P.O. address, town, county, and State of the subscriber to which the **Primary Teacher** is mailed.

EDITORIAL.

The Teacher, with the present number, enters upon the fifth year of its publication. Its aim in the future will be, as it has been in the past, to present in all departments the best methods of training adapted to the elementary schools of the country which the ripe thought and extensive experience of the most successful, practical educators have produced. Such a record of methods of instruction, discipline, and management as have been tested and found successful, cannot fail to aid, especially those who have just entered upon the work of teaching.

The age demands of the primary teachers the intelligent application of their energy, enterprise, enthusiasm, and of the broadest professional training that can be made. Every day's work in the primary school should represent the highest effort and noblest purpose of the individual teacher to develop in the pupils self-reliance, originality, and all the other elements of well-balanced and thoroughly-trained minds. Every means and influence which will tend toward the building of *character*, also, should be brought to bear upon the children in the primary school.

Grateful for the generous patronage the primary teachers have given to The Teacher in the past, we desire them to further aid us in enlarging its sphere of usefulness, by sending us brief records of their personal work, of newly-tried plans that have proved a success, by suggestions on methods of discipline and management that will serve to strengthen those who distrust their own ability, and open the way for the accomplishment of great good by mutually aiding one another by a frank expression of their views, methods, and plans.

We regard the work of the primary teacher as the most important upon which one can enter. From the portals of these schools pass out the great army which will constitute the manhood and womanhood of the near future, and the training aright of the boys and girls during the most impressionable period of life is full of responsibility. The influence of the teacher over the child is unquestioned. If there is neglect in home-training, then upon the elementary teacher's shoulders must fall the burden of leading the child in the way of honesty and usefulness. The child holds with tenacity early impressions, and if new thoughts and emotions are grafted into their minds and hearts, which shall guide their steps in the paths of rectitude and duty, it will be a reward worth your while to strive after.

With the opening of the new school-year we desire to extend our greeting to all of our patrons, and wish them the highest measure of success in their noble work.

RECREATION AND PHYSICAL CULTURE.

Great care should be taken by teachers of young children, as they enter upon their work after the long Summer vacation, not to unduly restrain the activity of their pupils. The change from the freedom of the life out of school to the routine of school-work should be made gradually, and it will be found a wise thing to devote a few moments at frequent intervals to some new and simple recreation and physical exercise. There are many lively games, little stories and songs, all interesting to the children, and entirely in harmony with the object of primary schools. The few moments so devoted will be more than regained by the increased activity and cheerfulness of the pupils at their work. Two or more brief recesses in the open air during each session, when the weather is suitable, will be found a profitable expenditure of time.

Brief physical exercises, when performed with precision and uniformity, are a great benefit to a school. When possible, they should be attended with music, for the sake of the æsthetic and disciplinary effect. The object of such exercises is to afford the pupils a little relaxation, and to cultivate good attitudes and carriage of the body.

ON DISCIPLINE.

"HOW NOT TO TEACH."

William M. Giffin, Principal of the Newark (N. J.) City Training School, has published a valuable little manual, entitled "How Not to Teach," or "One Hundred Things the Teachers Should Not Do," with Reasons Why; and has kindly given us permission to quote the following suggestions on School Discipline:

A teacher should not use a commanding tone of voice when asking a favor, or when giving a direction.

No one enjoys being commanded. We would all rather be asked or told to do a thing, than to be commanded to do it. Then, again, the children will think it saucy, and therefore will become sulky and troublesome. "Please" will never harm a teacher.

A teacher should not ask a pupil if he has been out of order, when she knows he has.

Oftentimes the pupil will say, "No," adding a falsehood to his other offense. It was unnecessary to ask the question, as the teacher knew he *was* out of order, and she should have dealt with him accordingly.

A teacher should not, for a moment, hesitate to ask the pardon of a pupil or class that she knows she has accused wrongfully.

Morally speaking, it is her duty. The pupil and class will honor and respect her for doing it, and when their turn comes, they will not hesitate to follow her good example.

A teacher should not refuse to hear a pupil's side of a story after, if not in, school-hours.

All men are allowed a fair trial for any misdemeanor, no matter what the offense. There should be no absolute Monarchy in a Republican form of government.

A teacher should not look always at the faults, and never at the good, in her pupils.

"Whatsoever ye would that men should do to you, do ye even so to them." We do not desire Deity to see only our faults and punish us for them. He has said each will be *rewarded* or punished according to his works.

A teacher should not make a practice of selecting an idle, mischievous pupil for her monitor, or to run her errands.

Such pupils are smart enough to see her motive, and will often be out of order that they may be chosen, and hence are being rewarded, and not punished for their faults.

A teacher should not allow a pupil to sit in the class with untidy head, or dirty hands and face.

It will have a demoralizing effect on the class.

A teacher should not find fault with a pupil for doing what she is guilty of herself.

The child will see the injustice of such fault-finding, and will despise, and not respect, the teacher.

A teacher should not be satisfied with the careless or noisy performance of a direction, should not neglect to repeat her request until it is performed rightly.

She is not only teaching for the present, but for the future also; and habits formed when young are not easily broken when one is old. There is no better way to show the class that the teacher is not satisfied, than to have them repeat the direction until they do it rightly. *The teacher should be careful not to show any temper.* Simply, in a calm though positive manner, repeat until satisfied.

A teacher not having charge of a school should not, while in a room observing, correct any act of disorder or faulty recitation. Neither should the class-teacher be any more or less strict then than at any other time.

The children should be impressed with the fact that the class teacher has full charge of them. Then they will not think they are to be good only when the principal is in the room. Otherwise the children might lose confidence in the class teacher. The principal can correct any faults privately; or, by asking for the class, he, many times, may correct the fault and do harm to no one.

A teacher should not neglect an opportunity of showing her appreciation of pupils' trying to do right, or of instilling into the minds of the pupils a sense of the nobleness of doing right because it is right.

Many children who are in our public schools never go to church or Sabbath-school. Their only model of manhood or womanhood is their teacher. Teachers, how important that the model be a perfect one!

A teacher should not take the time of the class to do her own work.

A teacher has no more right to take the *time* of the pupils than she has to take their *money*. She cannot write letters, make out reports, etc., and teach at the same time. Moreover, her duty during school-hours is to teach.

A teacher should not allow tattling or tale-bearing.

Because they relate to petty offenses, and are usually, if not always, given from mean, selfish motives, in which the children should not be encouraged.

A teacher should not neglect to encourage pupils to give evidence or information of any wrong done to persons or property.

This is in no way related to tale-bearing. It is just as proper for one pupil to tell that another pupil has been cutting his desk or destroying his book, as it would be for him to tell one man that he saw another man steal his purse. The moment the teacher asks for information, it becomes evidence, for which the teacher has a right to ask, and which the pupil is bound to answer.

A teacher should not compel a pupil to stand, sit, kneel, or take any other long-continued attitude of restraint as a mode of punishment.

Such treatment is not only wrong, but also very injurious. The pupil will never have any respect for the teacher who takes this mode of punishing him.

A teacher should not be changeable in her discipline.

A teacher must be every day alike. Steady, uniform, even, regular discipline, must be had. "Never a tyrant, —always a governor."

A teacher should not stand before a class that is becoming generally disorderly, thinking to herself, "Oh, what shall I do?"

The class will know by her looks of what she is thinking. Good teachers are always ready in cases of emergency; and a little positiveness is all that is required to subdue the class. She should select some one pupil, and make an example of him. *The first* *one she sees out of order is the guilty one to her.*

A teacher should not explain any points in a lesson to a class while part of them are working.

A class cannot work and listen, If she has anything to say, she should ask them to give their attention, and she should not explain anything until they all give it. When they are told to work, let them work.

A teacher should not try to startle a class into being orderly or attentive.

A class will learn to wait for the "thunder-clap" before giving attention. A low, but steady, firm tone of voice will do the work much better. The desk was not made to pound on, nor the floor to stamp upon; and if used so, are of no use in obtaining order.

A teacher should not command or order a thing done, when a suggestion will do as well.

A class will think more of directions when they are "few, and far between." "Boys, I would not do that," is much better than, "Boys. turn this way and mind your own business, or I will give every one of you a mark."

A teacher should not consider "anything" good enough to wear to school.

A class will have more respect for a teacher who is careful about her dress, than they will for one who is careless. A class that respects a teacher is not hard to discipline.

A teacher should not call a pupil a sneak, liar, or any other name of the kind.

Because she is causing the pupil to think the same of her; and as his feelings will be hurt, he will be indignant, and, probably, will become surly and unmanageable.

Lesson on Kindness to Animals.

"BELL OF JUSTICE."

[To be read to pupils by Primary Teachers.]

It is a beautiful story, that in one of the old cities of Italy, the king caused a bell to be hung in a tower in one of the public squares and called it the the "Bell of Justice," and commanded that any one who had been wronged should go and ring the bell, and so call the magistrate of the city and ask and receive justice.

And when, in course of time, the lower end of the bell-rope rotted away a wild vine was tied to it to lengthen it; and one day an old and starving horse, that had been abandoned by its owner and turned out to die, wandered into the tower, and in trying to eat the vine, rang the bell. And the magistrate of the city, coming to see who had rung the bell, found this old and starving horse. And he caused the owner of the horse, in whose service he had toiled and been worn out, to be summoned before him, and decreed, that as this poor horse had rung the "Bell of Justice," he should have justice, and that during the remainder of the horse's life his owner should provide for him proper food and drink and stable.

Until about sixty years ago there were no laws anywhere to properly protect from great cruelty these dumb creatures that toil for us, and die for us, and make our lives happier and more useful and so wicked and unmerciful men used to beat them, and work them beyond their strength, and give them too little food, and not properly care for them in cold weather, and in many other ways treat them cruelly and unjustly, and so make their lives very unhappy and miserable.

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* Written and compiled by Geo. T. Angell, Esq., President of the Massachusetts Society for the Prevention of Cruelty to Animals.

But about sixty years ago some of the good people of England determined that there should be laws to protect these dumb creatures from being abused; and so they formed a society for that purpose, which has become very great and powerful. In other countries good people, seeing what had been done in England, began also to form other societies of the same kind. And so the good work has gone on, until in almost every Christian country of the world, — in Europe, Asia, Africa, America, and many islands of the ocean,—these societies have been formed.

And now, within a few years, *the children* have taken hold of this work, and hundreds, and perhaps thousands, of societies of *boys and girls* have been formed in various parts of the world, many in Europe and some in America, to protect animals from cruelty.

"BANDS OF MERCY."

In England many of these societies are called "Bands of Mercy," and all the boys and girls that belong to them promise to do all they can "*to protect animals from cruel usage, and to promote, so far as they can, their humane treatment.*" And all the boys and girls that belong to these societies have cards of membership to hang up in their homes, so that visitors may see that they belong to these societies. And they have monthly meetings, where they read, and hear, and tell stories about animals, and recite poems and sing hymns, and have addresses from older people.

In the public schools of Philadelphia over three thousand boys belong to these societies, and each has a "German-silver badge" in the form of a horse's head, and each society has a flag or banner of different color,—blue, cherry, rose, etc. The teachers take charge of them. And they have meetings at which stories are read aloud and recited, and songs are sung, and addresses are made by the teachers and others; and they have a reading-room, and a library of interesting books. Sometimes they march to music in the school-rooms, and sometimes they have a great Union meeting in some public hall, where prominent gentlemen go and address them.

But probably the largest society of boys and girls in the world is one in England, called "The Dicky Bird Society." It was started to protect the birds and their nests, but now includes other creatures. Over thirty-seven thousand boys and girls now belong to this society, and they all promise *to be kind to all harmless creatures, and to protect them to the utmost of their power, to feed the birds in winter, and to never take or destroy a nest;* and that they will all try to get as many boys and girls as possible to join "The Dicky Bird Society."

In the life of a good man named Thoreau, who lived in Concord, Mass., a few years ago, and who was very kind to all God's harmless creatures, it is stated that even "the fishes came into his hand when he dipped it into the stream; the little mice would come and playfully eat from his fingers, and the very moles paid him friendly visits. Sparrows alighted on his shoulders when he called them; Phoebes built their nests in his shed, and the wild partridge with her brood, came and fed quietly beneath his window, as he sat and looked at them."

"After he had been two or three months in the woods the wild birds ceased to be afraid of him, and would come and perch on his shoulder and sometimes on his spade when he was digging."

"I think if the birds could vote they would make Thoreau an honorary member of "The Dicky Bird Society."

SOME QUESTIONS.

[Others to be added by teachers.]

What can you tell about the "Bell of Justice"?

When did they first form a society to protect animals, and when?

Where are there such societies now?

Where did boys and girls begin to form such societies?

What are many of them called in England?

What do they promise to do?

Where are their cards of membership hung, and why?

What do they do at meetings?

How many boys in the public schools of Philadelphia belong to these societies?

What badge do they wear?

What banners do they have?

What is done at their meetings?

What can you tell about "The Dicky Bird Society"?

Where did Thoreau live?

What can you tell about the friendship of the fishes and birds for Thoreau?

If the birds could vote, what might they do?

OUR NOTE-BOOK.

FLOWERS.

Flowers, fair, beautiful flowers,
Can you dream what pleasure you give
To many poor and aching hearts,
That are all to weary to live?
Will you hear my thankful whisper
Which I lovingly breathe to you,
In telling of all the kindness
Which you have done, and yet will do?

What a friend you are to children!
And with what smiling, patient face
You endure the pain of parting
From parent stem and native place!
Wreathed around the childish figures,
Gaily upon their heads you lie;
Sympathetic in their gambols,
Faithful to them until you die.

See your dear, delicate faces,
Kindly beam on the bridal pair,
Surrounding them with perfumed breath,
Nestling softly in the bride's hair.
Pink and white charmingly blended,
Joy regards you with pleasing smile,
Love, Hope, Happiness, Bliss, and Peace
Gaze proudly at you all the while.

Again your sweet, soothing presence
Is felt in Sickness dark room;
In that winsome way you're telling
Of wondrous air, and Nature's bloom.
With what glad light the worn eyes shine!
And how the breath quickly revives!
The sight of you, sweet, fresh flowers,
Has brought health to many lives.

In the chamber of Death you come,
With blanched face and drooping head,
Pure lilies on the coffin lie,
Roses kiss the hands of the dead.
Pale and paler grows your cheek,
Strongly and sickly comes your breath;
O flowers, you also are clasped
In the triumphant arms of Death!

Flowers, fair, beautiful flowers,
You daintiest things of Earth,
You teach us a useful lesson

Of sweetest truth, and sterling worth;
You tell us of deeds of kindness,
Of Charity, Pity, and Love,
Of Mercy, Heaven's soothing angel,
And God, our Maker, above.

San Dieguito, Cal., 1881. E. Z.

SCHOOL PASTIMES.

PLACE-LESSONS.

A source of recreation and language building.

Hold up the right hand; left.

Point to the right; left; up; down.

Place your hand in your desk; under; over.

Place your pencils on the outside of the desks; inside.

Look to the front of you; back.

Where is the door?

Where are the windows?

Step forward; step backward.

Bend forward; bend backward.

What is above your head?

What is under your feet?

Where is the ceiling?

Where is the basement?

I was walking one day; I saw a bridge, and some water.

The water was where?

The bridge was where?

Is the blackboard in front, or behind me?

Am I behind, or in front of the blackboard?

Whose room can we see if I open the door?

Where is Miss B.'s room?

Yes, we might say "across the hall"; "in front of us."

I will give you a new word, *opposite.*

Where is her room?

What is opposite the window?

Where is the clock?

What is opposite my desk?

Point to the right.

Point in the opposite direction.

Look up; look in the opposite direction.

Tell the opposite of left; down; front; over, in.

An apple may be sweet or ——?

The day may be warm or ——?

Pleasant or ——?

A book may be large or ——?

Heavy or ——?

A room may be dark or ——?

A child may be pleasant or ——?

A dog may be cross or ——?

Give the opposite of rough; sharp; dull; thick.

Needles may be ——, or ——?

Scissors may be ——, or ——?

What opposite things can you say of meat; tea; coffee; milk; fruit?

Give the opposite of glad; good; happy; young.

(*For higher grades.*) Give the opposite of north; east; noon; winter; spring; joy; hope; expectation; profit; fertility; honor; etc.

PRIMARY SCHOOL.

HINTS TO TEACHERS.

No teacher should,—

Be confined to a text-book in recitation.

Do that for the pupil which the pupil can do for himself.

Neglect the dull and backward pupils.

Find fault needlessly.

Speak in an angry tone of voice.

Punish a pupil when angry or excited.

Be negligent in personal appearance.

Snuff, puff, chew, or use liquor.

Use profane or vulgar language.

Keep late hours or improper company.

Pretend to know everything.

Every teacher should,—

Open school precisely at the appointed hour.

Have the school-room tidy and comfortable.

Have a time for every exercise, and have every exercise in time.

Be thorough in everything,

Keep every pupil constantly employed.

Interest pupils in all their studies.

Approve all that can consistently be approved.

Be slow to promise, but sure to perform.

Do one thing at a time, and do it well.

Set a pure and noble example.

IT is not what we tell our pupils, but what we teach them, that produces good and lasting results. We can tell to them in *minutes* that which cannot properly be taught in *weeks*. Here the quality of impressiveness has great weight. Are your words forgotten by the pupil as soon as heard, or have you the power of arresting and holding the attention until the matter in hand is grasped? In this lies the secret of success in teaching.—*Ex.*

IN the time of Herodotus, men thought the sun not more than a dozen miles distant from the earth's surface. Half a century later, they raised it to 14,000 miles; after another century, to 3,000,000 miles; after nineteen centuries, to 36,000,000 miles; and in the next hundred years, to 78,000,000 miles; until Enke, in 1824, fixed it at about 95¼ millions of miles. Computations in 1862, at the opposition of Mars, reduced this estimate as some millions of miles too much. The universal and expensive preparations to observe the transit of Venus, in 1874, were expected to settle the question; but, strange enough, no official reports from the learned national commissioners have yet been rendered.

Proctor says, that the English estimate now stands at 92,600,000 miles. In France, M. Puiseaux, at great pains and expense, observed and calculated for himself, and has reached results in which he has great confidence, putting down the mean distance of the sun from the earth at 91,840,270 miles.

PRESIDENT GARFIELD at four years of age received at the common district school the prize of a New Testament, as the best reader in the primary class. At eight he had read all the books in the humble log farmhouse, and began to borrow from the nighbors such works as *Robinson Crusoe*, *Josephus's History and Wars of the Jews*, *Pollok's Course of Time*, and others. These were read and re-read by him, until he could recite whole chapters from memory. He was equally master of arithmetic and the earlier steps of a course in English Grammar.

OBJECT TEACHING.

F. B. Ginn, Esq., of Oakland, Cal., has invented and published a valuable Adjustable Addition Table,—Pocket Edition. The methods of use are indicated by the following

DIRECTIONS FOR PRACTICE.

Begin with the units column and add by combining two numbers, naming only the sum; thus, for 7 + 5 say 12; for 4 + 9 read 13, and so on through the table.

Change the combinations and continue the practice until you can give the sum of any two numbers as readily as you pronounce syllables or short words in reading.

Then combine four numbers, taking each two as syllables, *i. e.* in adding 7, 5, 4 and 9, think 12 + 13, but say only 25.

When you can see the sum of any four figures at a glance, you are then prepared to add.

Add by twenties, thus: 7 + 5 and 4 + 9, *i. e.* 12 + 13 = 25. Simply retain the 5, the twenty being registered by placing the thumb of the left hand upon the first finger. Continuing the addition of this column, connect the 5 with the next number for the first syllable of the next twenty, thus: $5+8$ and $5+9$, *i. e.* $13+14=27$; retain the 7 and register twenty more by moving the thumb to the second finger, and so on.

After the thumb shall have registered the fourth twenty, indicated by the thumb placed upon the little finger, the fifth twenty is noted by opening the hand, and the second hundred is registered in twenties as the first.

Continue this practice until the eye sees, the mind acts, and the hand registers automatically, when addition will be performed as easily and rapidly as reading, This can be acquired in a few weeks.

DRAWING.

Prof. W. N. Bartholomew, who is well known to the teachers of this country as the pioneer in awakening an interest in the study of drawing, has recently prepared a new series of books which it will be to the interest of all primary teachers to examine.

Drawing has heretofore been attended with much expense in time and money, and has produced quite generally very unsatisfactory results. This has been due to the methods employed, which have been such as to necessitate the services of a professional instructor in this branch,—a fact which in its self has tended to impair that harmony which should exist between the regular teacher and her pupils; and furthermore, the character of the lessons has frequently been such as to deaden whatever talent existed in the pupil's mind, instead of cultivating his taste for art.

The first dish found on the usual bill-of-fare, in a course of drawing, is a set of cards for slate-practice. Any impartial observer will readily perceive, by a careful comparison with the books which are intended to follow, that the examples on the cards are in all cases as difficult as those found in the books, and quite frequently they are far more difficult to execute. More than this, the scholar is called upon to enlarge the card-drawings on his slate, while the majority of the patterns in the books are to be reproduced, by merely copying the example, in size as in other particulars.

The portion of Prof. Bartholomew's series which will specially interest our readers, is comprised in the four lower numbers. These books are intended for primary schools, and take the place of cards and the slate-exercises. One great advantage to be noted is this: that while work on the slate has its value, and should accompany the use of the books, it furnishes no such record of the pupil's efforts and progress as the book does.

The method of the books is a worthy one. Drawing is taught by drawing. There is no text, no lengthy directions to pupil or teacher, no abstract definitions of terms. All that is required to enable the teacher to use the books intelligently is found in a guide which the publishers are ready to furnish to her.

The plan of tracing a part or the whole of the copy, which has been found to be so beneficial in teaching penmanship, has been introduced into these books. The efforts of the pupil are thus definitely directed. His hand is kept within the proper limits; he is able to grasp in his mind the idea of form, and when he arrives at the point where the use of books is generally begun he has learned something; he is really prepared to begin the work then placed before him with some degree of intelligence.

The style of patterns employed is simple, progressive, and varied. The price of the books is remarkably low. The teacher who desires to make drawing a success, to interest her pupils while real progress is attained, should not fail to apply to the publishers, Potter, Ainsworth & Co., New York; or to their agent, Mr. A. S. Manson, 32 Bromfield street, Boston, for samples of these books.

WHAT is the fruit of the strawberry?

What are the living parts of a tree?

What book on Education have you read this summer? How much of it have you mastered?

STUDY should be a delight, and may be. The ceaseless curiosity of children, their continued activity, and their seemingly insatiable demand for variety, may all be satisfied, fostered and trained in the ever-enlarging laboratory of nature.—*Mary R. Alling, in Education.*

MRS. E. B. GRANNIS'S *Little Gem and Kindergarten* has a place of its own in our juvenile literature, for it is especially devoted to the kindergarten work, and is full of the happy kindergarten spirit. Pictures, stories, verses, all bright, pure, pleasant, and useful, fill its pages.—*N. Y. Observer.*

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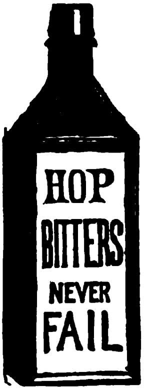

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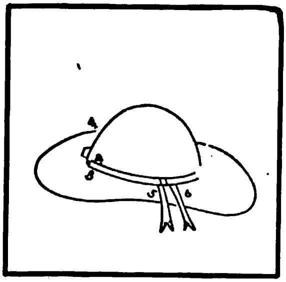

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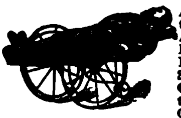

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THE

PRIMARY TEACHER.

VOL. V. OCTOBER, 1881. NO 2.

FIRST STEPS IN NUMBERS.

BY W. W. SWETT.

I.

I. The process of counting the even numbers is an easy and natural one to almost every child. Even the abstract numbers seem to come readily in order to all except a few. Take a handful of any small articles and let the child count them out, two by two. Day by day the exercise may profitably be repeated. A pile of two-cent pieces may be substituted, and counted one by one. This is practical work, and has something to do with real life. Is it not better than being cross-questioned about 6 and 2, 9 and 2, 4 and 2, etc.? Every thinking teacher knows that a few children respond readily to this cross-questioning, that others quickly restore the forgotten answers by counting, and that some fail altogether; the memory, improperly tasked, refusing work altogether.

But what shall be done with the dull child, who cannot glibly count 2, 4, 6, 8, 10, etc.? Let him write all the numbers from 1 to 20, and cross out each alternate one; or tell him to whisper 1 and speak aloud 2, whisper 3 and speak aloud 4, etc. To help the dull child to see clearly, after a time, what his brighter brother sees at once, is the teacher's work and art.

II. Before taking up the odd numbers, count by tens, which every child in the class can do, possibly without help, at most with very little. The patient teacher can supplement the child's efforts. Give some real dimes to count, or make some from cards, neatly marking them. Possibly some deft little fingers may be kept out of mischief by ornamenting some of this bogus money. Don't hurry. It is pleasant work to the child, but that should not condemn it. It is useful, too. Counting ten, twenty, thirty, forty,—that is what the butcher and the milkman do, the clerk and the cashier. You might give the twos one day and the threes the next, and then review, until the bewildered child hates arithmetic.

III. The fives are acquired with little effort. Help the child, that needs it, over fifteen and twenty, and you will soon have him running glibly from five to fifty, or even a hundred. Have nickels by all means, but card-coins will be better than nothing. Exercise occasionally with the abstract numbers, letting one count twos and another fives.

IV. Now return to the odd numbers, and explain that the omitted numbers in the first lesson are those now to be used. It may be well to write all the numbers from one to one hundred, and cross out the even ones. After this is understood, remove the numbers and let each make an effort to count the abstract odd numbers, the teacher marking the result. When an error occurs explain pleasantly, "That is an even number;" or "You have skipped one; the right answer is ——."

Now make the trial of counting money, starting with one penny and adding two each time, finally substituting two-cent pieces. Buttons or beans or little strips of card may be counted in the same manner.

V. The child has at last learned the real art of adding two, and can put it to a practical use. You know that the knowledge, the power is there, and you may frame questions that shall still further draw out and build up.

"How many are two and two?"

The child learned that long ago at his play.

"And two more?"

The teacher is to lead him to see that any one step in the process is simply naming the next even number.

How many are 28 and 2? How many are 38 and 2?

The odd numbers may be dealt with in a similar manner. We must aim to make the work different from counting two, one at a time, leading the child to think continually, "It is the next even number," "It is the next odd number."

VI. Let us provide a little game that shall embody this process of adding two, and something more. Prepare 18 little strips of card, and write on one, 2 and 2; on another, 3 and 2; and so on up to 19 and 2. Take one of these little cards, and tell the class that you will write the answer on the back at their prompting. When all are ready, take one and say, "This answer is 13; what numbers are on the other side?" Give the card to whichever answers promptly and correctly. Or, if the class is too large for this, prepare several sets, and let the first pupil answer "11 and 2," and receive the card. Then for the next, state the answer to a second card. If any one fails to speak promptly, pass on to the next; but be careful to keep the fact understood that the last number on each card must be 2.

VII. Every teacher must have noticed that many children find little resting-places in their tasks,—oases in the desert. Such are what we will designate as double numbers. The child that misses all the rest of the sevens, is happy if it comes to her lot to answer "seven and seven." Try it. Ask for these double numbers, while you write the results, not in regular order, but as they will be given if you know how to keep yourself and others out of ruts. If no one thinks so far, ask how many are 25 and 25, 50 and 50, 20 and 20. Perhaps these three couples will be enough to put with the necessary ones, ending with ten and ten.

The dull child that needs a little help here should not be discouraged. Some little device may be adopted to help him so that he shall think. Put pennies in two rows, or make two rows of stars or crosses, and tes your ability to teach. Bright scholars learn without much teaching. Prepare little cards, as before, and put them with the others. We shall have greater variety; but some one may say for 18, sixteen and two, when the card is marked 9 and 9. He should be told that his answer is correct, but that other numbers make 18, and they are on this card.

PHYSIOLOGY FOR PRIMARY CLASS.

BY MRS. LOUISA P. HOPKINS.

VI.

THE SENSES.

Teacher.—I told you about the brain, which I called the engine. Everything in the body has to be connected in some way with the brain; all knowledge of the outside world, all means of reaching outside things, of doing or learning, must come in different ways to it. What ways do you think of, Sallie, by which you can learn about this flower?

Sallie.—I can see it.

Teddy.—I can smell it.

Teacher.—How do you learn of the cricket, which we do not see, but which we know is near?

Prescott.—I hear it chirp.

Teacher.—And if I tell you to shut your eyes and open your mouth, and put *this* into it, what is it?

Amy.—It is a grape. I taste it.

Teacher.—Once a little girl had the scarlet-fever, and it destroyed her sight, hearing, smell, and taste, and it seemed as if she could never have any way of knowing or doing or enjoying anything. Her body seemed like a close-shut prison for her mind. But there was one way left open, and a good, wise man took that way, and through it taught her as much as many a person learns through every sense of a perfect body. She is highly educated now, and has lived a happy and useful life. What was that one way left to her to find out about outside things?

Teddy.—She could feel of things.

Teacher. — Now name all these ways from the brain to the outside world.

All.—To see, to hear, to smell, to taste, to touch.

Teacher. — These are called the *senses*, from a word meaning *to feel*, because every act of the senses is a touch of the organ of sense upon what is brought to it. The eye is touched by waves of light, the ear by waves of sound, the nostril by perfume, the tongue by flavor, the skin by what is in contact with it. All these parts *feel*, and the brain takes knowledge of what is felt. Name the *organs of sense.*

All.—The eye, the ear, the nose, the tongue, the skin.

Teacher.—The fingers have a very delicate and wise sense of touch, although the whole surface of the body can observe in the same way. In using these senses we ought to take pleasure, as it is intended that every healthy action of the body should give more or less pleasure; but we must never take more enjoyment in the mere action of the senses than in the purpose for which they act. You should not eat for the mere pleasure of taste when you do not need food. You should never use an organ of sense until it is weary, or until you cannot at once stop using it when it has done your work. You must control your senses; be their master, and not their slave. It is a sad thing when even a child cannot control his senses. He cannot be trusted to take care of himself. A man who is the slave of his senses is a brute, bad and degraded in character. The senses must always obey the reason and conscience.

Ethel.—Where is your conscience?

Teacher.—That is a part of the soul. It tells us what we ought to do or ought not to do. If we obey it, it will be faithful, and grow more and more clear and decided; if not, it becomes uncertain. It is the *sense of the soul*, as reason is the sense of the mind. The senses of all grow more delicate as we use them and do not abuse them. We must take good care of the organs of sense. The eye, for example, is so delicate and easily hurt: what protection has it?

Esther.—The eyebrows hang over it, just like a porch.

Gertrude.—I have often thought the eyelids are like fringed curtains to cover it. They open and close so quickly before you can think of it.

Teacher.—You have a little fountain of salt water to wash it with. We will take *the eye* for another lesson.

◆

BOTANY FOR "LITTLE PEOPLE."

BY MARION.

IV.

As the autumn advances our attention is naturally turned from the flowers to the ripened fruit. A complete study of fruits will be found a difficult one; still, children may learn some of the characteristics and differences of various kinds, and be enabled to recognize them readily.

In many cases fruits are confused with seeds. Show the distinction carefully. In the early study of the flowers, the pupils studied about the part called the ovary, containing the little ovules. They can easily be led to understand that the ovary when ripened forms the fruit, that the ovules which it contains become seeds, and that therefore seeds are found within the fruit.

Let it be understood that some fruits open naturally to discharge the seeds, and others do not. Ask the children to bring you illustrations of each; as in the first case, the pea, larkspur, and milkweed; in the second, the apple, maple, and elm.

Several lessons may be given in teaching the kinds of fruit. A simple division may be made into,—

I. Dry fruits.
II. Fleshy fruits.

Let examples be given you by the children, before you take up the subject yourself. After the most common fruits have been divided by the scholars into these classes, you may add to their lists. Among the dry fruits you may speak of various forms:

1. The pod, as in the pea.
2. The winged fruits.

These are so arranged that they may be easily carried about by the wind, and are of several kinds.

a. Those having a wing, or key as it is often called, on the end, as the white ash.

b. The whole fruit wing-margined, as the birch and elm.

c. A pair of fruits, as in the maple, with a wing from the end of each. These are often called by children "knives and forks."

3. The grains,—often mistaken for seeds.

4. The nut, with its hard shell, and meat within. Call attention to the fact that the nut often has a whole or partial covering, as the cup of the acorn, the burr of the chestnut, and the leaf-like covering of the hazel-nut.

Coming now to the careful consideration of *fleshy fruits*, you may speak of several varieties:

1. The stone-fruit, as the cherry, plum, and peach.

Do not allow the little ones to confuse the very small stone-fruits with berries, thinking the stone a seed. This is a mistake often made concerning the so-called huckleberry.

2. Those with thin skins, as the apple, pear, and quince.

3. The gourd-fruit, with hard or firm rind, but fleshy internally; for example, the squash, melon, and cucumber.

4. Those with leathery rind, as the orange, lemon, and lime.

5. The berry. Examples: grape, currant, banana, and tomato.

Having dwelt thus upon simple fruits, it would not be wise to attempt to explain to little children those fruits more complicated in their structure. It may be well, however, to correct a few mistaken ideas which most children will be found to have. Take, for example, a blackberry, and show them that it is not a single fruit, but is composed of many attached to a central part. The raspberry and the thimble-berry have the same structure, but the fruit easily separates from the central part in picking.

It will be a surprise to many that the strawberry is not a real berry, but that the true fruit consists of small bodies, often called seeds, on the outside of what we consider the berry.

Perhaps some of the children may not know that the cones of the fir and pine could correctly be called fruit.

In all these lessons, it is to be understood that the real fruits should be brought before the school, and that every scholar may have constant practice in examining and observing, for himself, each difference of which the teacher may speak. Unless this can be done, the most careful teaching upon this subject will be almost useless, and will not be long retained in the memory.

There is danger, in giving oral lessons, of yielding to the temptation to give too many new ideas at one time, and of forgetting that constant repetition is needed in order to fix ideas in the minds of children. If one has very young children, it may be well to select some of the most common fruits to be used as object-lessons. Let us take an apple:

Teacher.—What have I here?

Scholar.—An apple.
T.—What color is it?
S.—It is red.
T.—Who will tell me something else about the apple?
S.—It is round.
S.—It is mellow.

Cut the apple that the children may see the inside.

T.—What do you see now?
S.—It is white inside.
S.—I can see some seeds.
T.—What color are the seeds?
S.—The seeds are black.
T.—What does that show?
S.—It shows that the apple is ripe.
T.—Are all apples like this?
S.—Some are green when they are ripe.
S.—Some are yellow.
S.—Many apples are smaller than this one.

Continuing questions somewhat in this style, you may tell the children where apples were first found, when first brought to this country, and other items of information that will come to mind.

WRITING-LESSONS FOR LITTLE FOLKS.

BY LYMAN D. SMITH.

IV.

How shall we teach writing to little folks? Make writing the expression of thought. How much interest would be taken in the reading-lesson, if for many weary months pupils should be compelled to enunciate letters, syllables, and words, disconnected from any thought and only serving the purpose of an elocutionary drill? Is it not the ideas, the thought that flashes into the mind through the medium of the spoken sounds, — that give the real zest to the reading-lesson? Why should writing be divested of all thought, and given to the child as a mere mechanical drill? Is it not better to put the same factor of interest,—expression of thought,—into the writing-lesson, that is put into the reading-lesson?

Let the child start with the simplest letter of the alphabet, and a *complete* letter; let him take next the letter most similar in form; and then let him combine the two. These three simple steps can readily be taken up as a first lesson. As soon as the child has learned two letters that will form a word, such as "in," let him write the word; very soon give him, for practice, two or more little words of similar build; and as soon as possible, make each short series of words convey to the child some little childlike thought; thus leading him very early, and almost imperceptibly, into phrases and sentences. While letters and words should be so arranged as to give the proper penmanship-drill, they should at the same time be so associated that the written signs, and the printed signs, and the spoken signs, shall all have the same meaning and value to the child. Never let him lose sight of the idea that his writing is as much a language as his reading and his speaking; and never let him work day after day, and month after month, making arbitrary marks and meaningless words, without knowing what it is all about. This language-method of teaching has been found eminently successful in the reading, and will bring forth the same beneficial results in the writing.

It is not desirable to give the child for his first writing-lessons, fragments of letters. This cutting to pieces of the written characters breaks up the image of the letter in the child's mind, and breaks up his *writing*-movement, leading inevitably to a slow, *drawing* movement. For instance: Two simple lines joined in an angle or in a turn, mean nothing to the child; but three simple lines joined in a sharp angle and a short turn, with a dot, mean small *i*. It is really easier to make a whole letter, than to make any part of it without reference to the whole letter; just as it is easier to speak a whole word than to pronounce its elementary sounds. When you write a letter, you have the image of the letter in your mind, and write the letter as a *whole*. Children must be taught to do the same from the very start, and not to draw the letter laboriously, line by line. The child's first reaching out for the form will be very vague and imperfect, but it will be a step in the right direction, and a step that will not have to be unlearned. Remember that the process is new to him; his pen or pencil is a strange instrument; he cannot control his fingers, and does not know how to move his arm. The teacher must, of course, explain all this in a simple way, and illustrate it. Then, practice by the pupil, with constant assistance from the teacher, will gradually bring confidence and skill. Although the child's first attempts are imperfect, illegible, perhaps seeming failures, when he is able to make a legible letter or a legible word, so far he has learned to *write*.

Analysis should be a secondary process, and should be used for purposes of criticism after the letter is written. But every time that the pupil *writes*, let him aim for the *whole* letter, as a continuous effort, just as he does in speaking a word.

Take, for instance, small *o*. The idea of the letter is a small oval with an introductory curve leading up to it, finished with an introductory curve leading up to the next letter. When the pupil writes the first line, he should aim for the top of an oval; when he strikes the point where the oval should begin, he should write the oval as a single curve with continuous movement. When he has completed the letter, he should compare it with some standard model, and criticise it. He should then repeat his effort, bearing in mind the failures of his first attempt. By this method pupils will be taught to *write*, and not merely to *draw letters*.

SKETCH OF A LESSON IN FORM.

BY "SHADOW."

Introductory Note.

Before commencing lessons in Form, the pupils are supposed to have had a course of *talks* with the teachers, in which they have been led to understand the *senses*. The signification of such words as *object*, *length*, *height*, *depth*, *breadth*, and *thickness*. In connection they may be led to appreciate the use of the word *dimensions*.

In the first lessons, as indeed through all the work, the teacher must guard against *haste*. A class of young children, in a lesson lasting twenty-five or thirty minutes, will seldom learn more than three new *terms*, and any attempt to hurry them must result in their gaining *words* without the underlying ideas. They should be led to appreciate the necessity for a new word before it is given them.

In order that the children may early acquire correct habits of expression, the teacher must have them pronounce distinctly, and must be very careful that they make full statements. Fragmentary answers or remarks indicate indistinct ideas, as well as disconnected thoughts.

As a means of cultivating the judgment, as well as of holding the attention of all the children, frequent class decision is judicious. The teacher's confirmation of correct judgment should, of course immediately follow a class decision, as no child should be permitted to remain uncertain whether he is right or wrong.

The teacher must arrange the matter for development as clearly and concisely as possible. and before meeting her class must arrange a definite plan for each particular lesson; taking care that this plan shall admit such modifications as circumstances may require.

LESSON.

Teacher. (*Presenting a box to class.*)—What have I?

Child.—You have a box.

T. (*Passing her hand over it, taking care to touch every part.*)—What am I doing to this box?

C.—You are touching the box.

T.—How do you know that?

C.—I can see you touching it.

T.—What sense are you using in order to see me doing this?

C.—The sense of sight is used.

T.—You may touch the box. [Child does so; teacher taking care that he passes his hand over every part.]

T.—Mary, you may tell me what John has done.

C.—John has seen and touched the box.

T.—How many senses has John used in examining this object.

C.—He has used two senses, sight and touch.

T.—How many think that is true? [Class decide by a show of hands. Teacher confirms, saying, "Yes, that is right."]

T.—You may show me some other part of this box which we have not seen and touched.

C.—Cannot.

T.—Why?

C.—I can't get at it.

T.—You may show me the part of this ball which you can see and touch. [Child does so; other children showing parts of slate, desk, etc., passing their hands carefully over the parts.]

T.—Who can tell whether those objects have parts which you cannot see or touch?

C.—They have, but we can't get at them. [Class decide, and teacher confirms.

T.—Who can tell me what that part of an object which we can see or touch is called?

[Child may say the *outside*, but the teacher corrects that by opening the box, and showing them that they can see or touch the inside of some objects; then she gives the term *surface*, which the class repeat, the teacher taking care that they pronounce the word very distinctly.]

T.—What is a surface?

C.—That part of an object which we can see or touch is called the *surface*. [Class repeat; teacher writing statement on the board.]

T.—Show me the surface of your slate, desk, ball, etc. [Child does so, each time making statement, "This is the surface of the ball," etc. Teacher drills them until she is certain the term is understood, then the class read from the board the written definition.]

T. (*Passing her hand over one side of the box.*)—What am I doing now?

C.—You are touching a part of the surface. [Class decide. Teacher confirms.]

T. (*Passing her hand over the end.*)—What am I doing now?

C.—You are touching another part of the surface

T.—How does the part which I first touched differ from the part I am now touching?

C.—The part you first touched goes one way, and the part you are now touching goes in another way. [Class decide. Teacher confirms, saying, "We call the way in which each of the parts go, an *inclination* of the surface.] Now, how does this inclination of the surface compare with this (*touching one side and one end*)?

C.—This inclination is different from that. [Class decide. Teacher confirms.]

T. (*Touching the bottom.*) — How does either of these inclinations of the surface compare with this?

C. — They are both different from that inclination. [Class decide. Teacher confirms.]

T.—Show me the different inclinations of the surface of this object. (Presenting different objects to children, and leading each child to make a full statement.)

T.—Who can tell what the different inclinations of a surface make? (produce.)

[Child will very likely give the word *parts*, in answer, which the teacher corrects by leading him to see that any place she touches is a part of the whole surface. Then if the *child* cannot tell, *she* gives the term *faces*, and a child repeats the full statement: "The different inclinations of a surface produce (make) *faces*." Class repeat; teacher writes it on the board.]

T. (*Presenting objects.*) — Show me the faces of this object. [Child does so, stating, "This is a face." "This is a face," etc.]

T. (*Presenting box.*) — Notice carefully as I pass my hand along this face, and tell me what is true of its direction.

C.—The direction of that face is (always) the same. [Class decide. Teacher confirms. Also have children find other faces having the same direction.]

T. (*Presenting cup or bottle.*) — How does the direction of this face compare with the direction of the other?

C.—It is different. [Class decide. Teacher confirms.]

T.—How does it differ?

C.—The direction of this face is not always the same.

T.—Since the direction of this face is not always the same, what may you say it does?

C.—It changes its direction. [Class decide. Teacher confirms.]

T. — Now look closely, and find just where this face changes its direction.

[Child cannot find the place, and at length states that the direction changes "everywhere," or "all the time," when teacher asks for a class decision, which she confirms, using the word *continually*, instead of the expression "all the time."]

T.—Look round the room, and find faces whose directions are always the same, and also those which continually change their directions.

[Children do so, each stating, "The direction of this face is always the same." "The direction of this face is continually changing."]

T.—Who can tell me what a face whose direction is always the same is called?

C.—A face whose direction is always the same is called (teacher or child give term) a *straight* face. [Class repeat; teacher writes it on the board.]

T.—And what is a face whose direction is continually changed called?

C.—A face whose direction is continually changed is called (teacher or child) a *curved* face. [Class recite; teacher writes on the board.]

T. (*Passing her hand over the top of the box.*)—What prevents this face from going farther outward in this direction?

C.—The side-face meets it, and stops it. [Class decide. Teacher confirms.]

T.—And what prevents it from going out in this, and this direction (*toward ends*).

C.—The end face meets it and stops it.

T.—How many faces meet here?

C.—Two faces meet.

T.—And here?

C.—Two faces meet.

T.—Show me other places where two faces meet. [Child does so, showing several, and making full statements.]

T.—Who can tell me what the meeting of two faces forms (makes)?

C.—The meeting of two faces forms (makes) (teacher or scholar) an edge. [Class repeat; teacher writes statement on the board.]

T.—Of how many kinds of faces have you learned?

C.—Of two kinds,—*straight faces* and *curved faces.*

T.—Since the meeting of two faces forms an edge, what kind of an edge do you think the meeting of two straight faces form?

C.—The meeting of two straight faces forms a *straight* edge, and the meeting of two curved faces forms a *curved* edge. [Class decide. Teacher confirms.]

Teacher may drill the class in what they have learned by having them show her surfaces, faces (*straight* and *curved*), and edges of different kinds, and by having them read the statements written on the board. Then she may erase statements, and have the children review objects and give definitions without descriptions. If they are sufficiently advanced they may write the definitions, which they have learned, in their note-books.

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GEOGRAPHY.

BY MARY E. BADLAM.

II.

IX. *Coast-Line.*

Let the children in imagination take a walk to the place where the land and water meet, and tell what name they will give to the land *close* to the sea or *bordering* on it.

They will readily give the word seashore.

Let them describe it, and tell what they would find upon it.

Give them the words, *coast* and *coast*-line.

Show the coast in pictures, and let them find it upon the globe, and lead them to talk about it.

Draw their attention to the indentations and irregularities of the coast-line, and draw on the board simple curves and broken, irregular lines.

Give the words *regular* and *irregular*, and let the children determine (on the globe) which are regular and which are irregular.

Let them trace the coast-line with the pointer, in every case coming back to the point from which they started, in order to teach them to be particular and careful, when they really *use* the globe and map.

X. *Peninsula, Cape, and Isthmus.*

Let the children point out the bodies of land with irregular coast-line.

Let them point to the curves the land makes in the water, or to the points of land that extend into the water, and tell them we give these points of land different names to distinguish them from the main-land and for convenience in talking about them.

Let them point to the large bodies of land extending into the water, and let them describe these.

They will easily form the definition, and then tell them the name and its meaning,—(*almost* an island).

A peninsula is a body of land extending into the sea and nearly surrounded by water.

Let them point to the strip of land connecting the peninsula and the other body of land, and describe it.

Give them the word *isthmus*, and tell them it means *a neck*, and then give the definition :

An isthmus is a narrow neck of land, joining two other bodies of land.

Ask them to point to bodies of land extending into the sea, smaller than peninsulas.

After they have pointed to several capes, let them give the definition : A cape is a portion of land extending into the sea.

Have them point to capes and peninsulas until they make no mistakes.

XI. *Sea, Gulf, Bay, and Strait.*

Let them point out the bodies of land with irregular coast.

Let them point to the curves or indentations the water makes in the land, and tell them we have names for these curves, to distinguish them from the main part of the ocean, and that these three names mean the same thing to us ; that they are interchangable ; that a sea could have been called a gulf or a bay just as well.

Let them point out seas, gulfs, and bays on the globe (changing from one name to another), and from what they know form their definition : A sea, gulf, or bay is a part of the ocean extending into the land.

Let them compare a cape with a gulf or bay, and see how they are alike, and in what respect they differ.

It is good practice to let them draw the various forms on the board.

Lead them to tell again that the water is close to the land, or *borders* upon it.

Let them see that the seas, gulfs, and bays are close to the land, or border upon it.

Ask what name might be given to a sea that *borders* on the land, and you will invariably get the answer, *border*-sea.

Then show them inland seas, and tell them these bodies of water are also called seas, but because they are not on the coast we do not call them border-seas but give them another name from their position.

Let them describe them.

At first the children will say they are *surrounded* by land ; but tell them to look again, and some one will find they are not entirely surrounded, but connected with another body of water.

Give the name *inland*, and let them give their definition of inland sea: A body of water nearly surrounded by land. Compare border seas and peninsulas.

It would be well to give also the term *Mediterranean*, and its definition.

Lead them again to notice how the inland seas are connected with other bodies of water, and let them describe the body of water that connects them.

Tell them it is called a *strait*, and let them give the definition: A strait is a narrow passage of water joining two other bodies of water. Compare strait and isthmus.

Let them point to border seas, inland seas, straits, gulfs, etc., until they make no mistake.

If they can point to the different bodies of water understandingly, they can always make up the definition.

It is always best to show pictures first. The children are always ready to bring books and pictures from papers, and from these you can select what you want.

Always write the definitions on the board, and if the children have blank-books, it is a good exercise in writing to let them copy these definitions into their books. Another good exercise is made by giving the words in the definitions as a spelling-lesson.

XII. *Land Surface.*

Pour water in a basin, and let the children see that it does not heap up on either side, but spreads itself evenly over, and the top or surface is level. Pour water into different-shaped vessels, and let them see that the surface is always level. Throw sand on the floor, and have them notice how it falls in a heap; throw water on the floor, and let them see how it spreads

Lead them to notice that all the parts of the ocean are connected, and as water is always level, never heaped up, that the water of the ocean must be level,—no higher in one place than in another.

Let the children decide, from their knowledge of water, which would be the higher, land or water.

Let them tell what would happen if the water were higher than the land.

The water is always lower than the land, and always level, and the sea-level, as we call it, is what we measure the height of places from. We say a place is so many feet above the level of the sea.

Highlands and lowlands.

Let the children describe some walks they have taken, and tell what they saw as they went along.

Then tell them you will take an imaginary walk with them, and see if they notice anything new on the way.

Walk with them down some street with which they are familiar, and ask them if they have any difficulty in walking, and why not. They will say the ground is even or level, and so they walk very easily.

Then pretend to turn aside, and walk where it is not level; where the horses draw their loads with more and more trouble, and they find they haven't enough breath to feel comfortable, and are obliged to stop and rest often. They will say it is a hill. Rest with them at the top of the hill, and tell them to look down at the foot of the hill and tell what they can see. Give the name *summit* for the top, and *base* for the foot of the hill.

Let them give definition: A hill is a portion of the land that rises higher than the surrounding country.

Then tell them there is another body of land rising much higher than the hill we are on, that we are too tired to climb now, and ask them what name we shall give to it.

Then get the definition: A mountain is a portion of the land rising higher than a hill.

Let them compare hills and mountains with the level land over which they traveled, and give the names *Highlands* and *Lowlands*.

Then they are ready to tell that the surface of the ocean is *level*; that the land-surface is divided into Highlands and Lowlands, and that the Highlands are called Mountains and Hills.

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LITTLE BY LITTLE.

Little by little the time goes by,—
Short if you sing through it, long if you sigh.
Little by little,—an hour, a day,
Gone with the years that have vanished away;
Little by little the race is run,
Trouble and waiting and toil are done!

Little by little the skies grow clear;
Little by little the sun comes near;
Little by little the days smile out
Gladder and brighter on pain and doubt;
Little by little the seed we sow
Into a beautiful yield will grow.

Little by little the world grows strong,
Fighting the battle of Right and Wrong:
Little by little the Wrong gives way,—
Little by little the Right has sway.
Little by little all longing souls
Struggle up nearer the shining goals.

Little by little the good in men
Blossoms to beauty, for human ken;
Little by little the angels see
Prophecies better of good to be;
Little by little the God of all
Lifts the world nearer the pleading call.

—*Ex*

EDITORIAL.

James Abram Garfield is dead. Let every primary teacher in the land improve the opportunity which this sad event affords to impress upon the boys and girls the great lessons which this mysterious providence furnishes. The whole civilized world is moved with a sorrow profound and universal, by the departure of this great man. The lives of Washington and Lincoln each teach lessons of the highest value to all the young of the republic, and they should be presented to the children as a part of the history of the country. No modern event has kindled in the hearts of Americans a feeling of sympathy like that felt for the aged mother, the devoted wife, and the beloved children of the lamented Garfield. Both Lincoln and Garfield were peculiarly the offspring of the common people, and their violent deaths at the hands of assassins make a dark page in the history of our national life. These tragedies show the necessity of having the dangers that attend the careers of those who yield to vicious indulgence, plainly pointed out to the young. The assassin and murderer were once little children, who, had they been taught the principles of right and wrong, would probably not have shocked the world by the commission of crimes more unjustifiable than any recorded in history. As the story of Garfield's life, services, and death are told to the children, let his heroic conduct during the eleven weeks of intense pain and suffering, after he was wounded by Guiteau, be presented so as to impress them with the supreme value of a noble character. How grandly the strong man wrestled with death! Patient and submissive, he bore his slow martyrdom without murmur or complaint. No recorded word comes to us from his lips, even of revenge or hatred for his murderer. As time passes, his character will be idealized as no other president of the republic has been, save Lincoln and Washington. May his death cause to spring up in the hearts of all a desire to honor virtue and nobility of individual character, and produce a hatred and horror of the vicious acts and tendencies which make such crimes, in a nation like ours, possible. Let us cherish the memory of a man of such nobility with tenderness, and teach the children of the land the grand lessons of his useful life.

> "We live in deeds, not years; in thought, not breath;
> In feelings, not in figures on a dial.
> We should count time by heart-throbs. He most lives
> Who thinks most, feels the noblest, acts the best."

We rejoice that the time has come in the history of education in this country when the importance of correct methods of *elementary teaching* is generally recognized. Many of the primary teachers occupy positions second to none in the ranks of educators in the other departments of educational work. They deserve this honor, not only on account of their professional training, intelligent zeal and genuine enthusiasm in their work, but because of the supreme importance of making the *first steps* in the training of the young, the true foundation for subsequent development and culture. We regret that thousands of those doing service in the primary schools have never enjoyed special preparation for their duties, such as normal and training-schools are designed to furnish them. Many of this class are accomplishing excellent results, owing to their general education, supplemented by natural adaptation for this grade of teaching. The great need, however, is of a more thorough knowledge of the principles and methods essential to the highest type of instruction.

How can this preparation be gained by those who have not had the opportunities to which we have made reference? We answer, by the careful reading and study of the *best* books relating to the principles and methods of teaching. In response to many requests from teachers of primary schools, in all sections of the country, we present the following partial list of books suited to the wants of those who desire to be benefited by the ripe experience of those who have made these subjects a profound study. We are aware that the list is very incomplete, but our limited space forbids that we should extend it further the present month. We trust that the primary teachers will examine this list of books, and secure for their private libraries of reference such as will aid them in making their teaching most effective in the several departments.

Books for Primary Teachers.

METHODS.

Methods of Teaching. John Swett. New York: Harper & Bros.

Object-Teaching and Methods for Primary Schools. Henry Barnard. Boston: T. W. Bicknell.

Pestalozzi and Pestalozzianism. Henry Barnard. Boston: T. W. Bicknell.

Lectures on Teaching. J. G. Fitch, M.A. New York: Macmillan & Co.

Graduating System for Country Schools. Alex. L. Wade. Boston: New-Eng. Pub. Co.

Graded Course of Instruction: with Practical Directions to Teachers. Wm. S. Wells. New York: A. S. Barnes & Co.

A Manual of Home and School Training. Hiram Orcutt, LL.D. Boston: New-Eng. Pub. Co.

Primary Teacher. W. E. Sheldon, Editor, Four bound volumes. Devoted exclusively to Methods of Primary Instruction. Price, $1.25 each. Boston: New-Eng. Pub. Co.

Mistakes in Teaching. Hughes. Toronto, Can.: W. J. Gage.

Theory and Practice of Teaching. David P. Page. $1.50.

Normal Methods of Teaching. Brooks. $1.75.

Principles and Practice of Teaching. Johonnot. $1.25.

Reminiscences of Froebel. $1.00.

The Principles and Practice of Early Education. Currier. $2.00.

In the School-room. Hart. $1.25.

Gentle Measures in Training the Young. Abbott.

Education. Herbert Spencer. New York: D. Appleton & Co.

Methods of Instruction. J. P. Wickersham. Phila.: J. B. Lippincott & Co.

School Economy; On the Preparation, Organization, Employments, and Authorities of Schools. J. P. Wickersham. Phila.: J. B. Lippincott & Co.

Manual of Information, and Suggestions for Object-Lessons in a Course of Elementary Instruction. Marcius Willson. New York: Harper & Brothers.

Manual of Elementary Instruction. Containing a Graduated Course of Object-Lessons. E. A. Sheldon, Oswego Normal School. New York: Charles Scribner's Sons.

Lessons on Objects. Graduated Series. Designed for Children between the ages of 6 and 14 years. Containing Information on Common Objects. E. A. Sheldon, Oswego Normal School. New York: Charles Scribner's Sons.

The Schoolmaster of the Nineteenth Century: Object-Lessons, Classifications of the Child's Conceptions. A full Guide for the Natural Development of the Mental Powers of Childhood. A rare book for use in the Primary School. Translated from the German. New York: Daniel Slote & Co.

The Teacher's Manual; for Teachers of the Primary Schools. Z. Richards. A.M. New York: A. S. Barnes & Co.

Object-Lessons: Things Taught; Systematic Instruction in Composition and Object-Lessons. M. E. Lillenthal and Robert Allyn. Cincinnati: Van Antwerp, Bragg & Co.

Class Teaching. Manual for Teachers; No. 5. Phila.: Eldredge & Brother.

On the Use of Words. No. 3 of Teacher's Manuals. Phila.: Eldredge & Brother.

Attention: How to Secure and Retain. James L. Hughes. Toronto, Can.: W. J. Gage & Co.

Moral Lessons: How to Teach Moral Obligations. M. F. Cowdery. Phila.: Cowperthwait & Co.

Good Behavior: Precepts to be Taught. Brattleboro, Vt.: Cheney & Clapp.

Mistakes in Teaching. James L. Hughes. Toronto, Can.: Gage & Co.

Chautauqua Text-Books. 30 numbers; 10 cents each. New York: Phillips & Hunt.

Cultivation of the Senses: Manual for the Teacher. Phila.: Eldredge & Brother.

Teachers' Assistant. Charles Northend, N. Y.: A. S. Barnes & Co. $1.00.

On Primary Instruction. Simon Laurie. London: Wm. Stewart & Co.

Science and Art of Education. Joseph Payne. New York: E Steiger & Co.

Pronunciation: Practical Phonics. E. V. de Graff, A. M. Syracuse: C. W. Bardeen & Co.

Early and Infant School Education. Jas. Currie. London: Thos. Lourie.

LANGUAGE EXERCISES.

Elementary Lessons in English. Part First: "How to Speak and Write Correctly. Teachers' Edition. Mrs. N. L. Knox (Heath). Boston: Ginn, Heath & Co. This book contains the Teachers' Guide to Oral Lessons in Language. It should be studied by every primary teacher.

A Series of Questions in English and American Literature for Class Drill. By Mary F. Hendrick. Syracuse, N. Y.: Bardeen & Co.

Words and Numbers. A Lesson-book for Primary Schools. Henry E. Sawyer. Boston: Thompson, Brown & Co.

Pictures for Language Lessons; with Suggestions for the Use of Illustrations. Boston: D. Lothrop & Co.

Stickney's Child's Book of Language. Especially adapted for Primary Work. New York: D. Appleton & Co.

Ballard's Word-Writer. Combines Spelling, Writing, and Grammar in one book; 10 cents. New York: D. Appleton & Co.

Lessons in English. J. M. B. Sill, A.M. New York: A. S. Barnes & Co.

Thought and Expression. Exercises in Written Language. S. S. Greene, LL.D. Phila.: Cowperthwaite & Co.

Swinton's School Manual of English Composition. New York: Harper & Brothers.

After Kindergarten, What? A Primer of Reading and Writing for Primary Schools. E. P. Peabody and Mary Mann. New York: E. Steiger & Co.

Monroe's Reading Charts. Phila.: Cowperthwaite & Co.

Sheldon's Reading Charts. E. A. Sheldon. New York: Charles Scribner's Sons. Appleton's Reading Charts. Mrs. R. J. Rickoff.

School Word-book. New York: Daniel Slote & Co.

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(To be continued.)

CORRESPONDENCE.

HOW I COMMENCED TO TEACH SINGING IN MY SCHOOL.

Editor of Primary Teacher:—"We shall want you to teach the elements of singing at sight, in your school," said the chairman of the committee when about to employ me.

I answered with great confidence; for if there was one thing that I prided myself in, it was my music. Had I not taken fifteen quarters on the piano, besides lessons in vocal culture? I was quite a wonder among my friends for the readiness with which I performed new music at sight, as well as for the character of the compositions I had been able to render before the public. I felt particularly competent to do that part of my work.

On commencing school, several days were devoted to getting things generally in running order,—arranging classes, and other matters of like nature, before the subject of singing received attention. We attempted at first a few simple songs. There was no instrument of any sort in the building, so I was thrown entirely upon the resources of my voice. My pupils ranged from six to twelve years of age; a few of them followed me in the songs tolerably, some lacked confidence and did not sing at all, others were confident, but discordant. "All this will be remedied when the regular music-lessons are given," I said to myself; "and I am also to teach them so that when a tune is written on the blackboard they can sing it by looking at the characters."

But just how was I to come at this business? I was going on, making a show of having singing in school, but it was mostly by singing the songs so loud myself as to cover up their bad work. I found that their combined lung-power was becoming too much for me; I retired from the contest each day with a sore throat, and yet no progress was apparent. As for singing by note, nothing whatever had been done, because I could hit upon no sensible way to set about it.

I reflected. Here were forty little people, each in possession of the most perfect of all musical instruments, and I, it seemed, had not wit enough after all, to teach them to play it. For I saw, plainly enough, that pulling them along by main force was not teaching. "If this curious voice-instrument were anything like my piano, or like my brother's flute or guitar, I could teach the letters and then have the corresponding sounds used in definite order. But it has no keys, finger-holes, frets, or fixed points whatever. When *I* sing, I see piano-keys in my mind, and think how they would sound; but that is something these children know nothing about, and it is no sort of use to talk piano to them. What *am* I to do?" I puzzled over the problem for some time.

There was an old closet in the school-house containing some dusty relics of a philosophical apparatus. Looking among these one day, I discovered a "monochord,"—a single string stretched upon a wooden frame, with a support under it, arranged to slide easily the entire length. By plucking the string with one hand and sliding the support or "bridge" with the other, tones of different pitch were produced; and I found that with sufficient adroitness in managing the bridge I could play a tune. As there were no marks whatever on the instrument, I could be guided in my attempts to find the right tones only by what sounded right. I also found that it mattered not where the bridge stood when I commenced to play; if I moved in a certain proportionate way I had the tune.

A new idea flashed upon me; my problem was solved! Playing upon this monochord was something very like what I wanted my children to do with their voices. In order to sing a tune correctly, as far as pitch is concerned (and that is what troubles learners most), one must know what will sound right, as to the rise and fall of the tones; then assume a pitch for the starting-point, and move the vocal organ in a certain proportionate way, being guided constantly therein by the ear.

It now occurred to me that the chief reason why some of my pupils did not sing at all, and others sang so incorrectly, was that they had no clear notion of what sounded right. I therefore sang one of our little songs entirely through to them, in order that they might hear it correctly. But I found that the entire song was too much; they lost their ideas before they came to the end. I then tried one line in the same way; this was better imitated, yet I found a good many who did not even start right on the first word. This nearly discouraged me; but on thinking over the matter at night, I resolved that I would have one sound right the next day, if we got no further. The song I had been experimenting with was the old school-tune, "Haste thee, winter."

In the morning, as soon as other duties permitted, I proceeded to carry my purpose into effect. Without telling the children what I was trying to do, I simply recalled to mind the starting-sound of the song, and sung it to a prolonged *la*. I then asked them to make such a sound as I did. To my gratification nearly all succeeded. Under pretext of observing how long it continued, the form of the mouth in singing it, etc., it was several times repeated; and at last I had the pleasure of hearing one musical sound from my school. Having obtained this, it was easy, by a similar process, to get the higher sound at the word "winter;" then to connect the two sounds learned, and afterward to sing each sound twice. Having done this, we had managed to get the right sounds for the first three words of the song, and there we stopped for that day. (I have since been told that the interval of the fifth in the beginning of this song is the very best for such an exercise.) On subsequent days we continued learning the song, tone by tone, the pupils growing gradually into a correct idea of how it ought to sound. When this tune was finished, we treated other familiar songs in the same way, but with less and less labor as the children's wits were sharpened by exercise. I found during this practice that very few, if any, lacked the vocal ability to sing correctly when once a distinct idea of the sounds was obtained.

How I found a way of laying the foundation for singing at sight, I must tell at some future time.

TEACHER.

Lesson on Kindness to Animals.

"WHAT WE OWE TO ANIMALS."

[To be read to pupils by Primary Teachers.]

Those who have read the story of Robinson Crusoe, the sailor who was shipwrecked on an island not inhabited by white men, will remember how he soon made companions of the various animals he found there, and with their aid sustained life until he was rescued. If one of us should be shipwrecked on a desert-island where no animal lived,—no horse to draw us, no ox to toil for us, no cow or goat to give us milk, no sheep to give us wool, no hens to give us eggs, no dog to be our companion and guard us in the night, no cat to lie on the hearth, no birds to sing their songs, no living creature to keep us company, no sound of living thing by day or night, only solitude and silence everywhere; with nothing to eat but such roots as we could dig from the earth, and nothing to wear but such bark as we could pluck from the trees, we should then know how much we owe to these creatures, which God has mercifully provided for our use. And ever afterwards, if we escaped from such a life, how grateful we should be to God for giving them, and how grateful to them for the services they render us.

It has been said by those who have studied, that if *only* the birds were all destroyed, we could not live on the earth, for the insects which birds eat would destroy all the vegetation, and all human and animal life would perish.

---

* By GEO. T. ANGELL, Esq., President of the Massachusetts Society for the Prevention of Cruelty to Animals.

BENEFIT OF ANIMALS.

Let us consider what we owe to animals. Some of them, such as cows, sheep, and goats, supply us with both food and clothing.

The ox toils for us, and also supplies us with food and clothing.

Horses, mules, and donkeys toil for us through life, up to old age. All these animals get in return for their service only their simple food and water, with shelter from the weather. sometimes very poor, cold in winter and hot in summer.

The dog is the companion and faithful friend of his master; whether the master be rich or poor he never deserts him, follows him as cheerfully to a hovel as to a palace, and asks in return only words of kindness, and the leavings of his master's table.

The cat keeps our homes free from mice, and makes them more cheerful.

Hosts of animals there are that make the world more pleasant, and our lives happier. They add a charm to the meadows by their bleating and browsing, and peaceful existence. They make the woods pleasant with their sweet songs and fair plumage. They peep with bright eyes from tree, and bank, and bush. They cover and fill the streams, and ponds, and lakes, and ocean, with their brilliant forms and abundant life. Since they do so much for us, we should do all we can to make their lives comfortable and happy, and always give them proper food, and shelter, and care, and kind words, and kind treatment.

A FABLE.

In an Eastern fable it is told that Amurath, sultan or emperor of the East, once in a sudden fit of anger cruelly struck a dog that was playing about his feet. At once a peal of thunder was heard in the palace and the Spirit Syndarac stood before him.

"Amurath," said he, "thou hast struck thy innocent brother, who, like thee, has received from the Almighty capacity of pleasure and pain. If thou art justified in giving pain to him, I, Syndarac, shall be justified in giving pain to thee."

From this fable let us learn that if we cruelly cause weaker creatures to suffer, God, who made them, may cause us to suffer in return.

SOME QUESTIONS.

[Others to be added by teacher.]

If we were shipwrecked on a desert island where there was no bird, nor any living animal, what should we be compelled to eat, and what could we find to wear?

If all the birds on the earth were destroyed, what is it said would happen, and why?

What benefits do we receive from cows, sheep, goats, oxen, and horses; and what do they get in return?

What does the dog do for us, and what does he ask in return?

What does the cat do for us?

How do hosts of other animals make our lives happier?

What ought we to do for them?

What can you tell about the Eastern fable of Amurath, sultan of the East?

What may we learn from that fable?

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OUR NOTE-BOOK.

Remember not, nor dwell upon
The words that cut like steel;
Perhaps he who the weapon threw,
The same could never feel.

Remember not injustice done
By one you thought your friend;
Forget the wrong, with laugh and song,
The doleful thinking end.

Remember not ingratitude,
And hopes all overthrown;
Nor think of those whose life has froze
The current of your own.

Remember not vexation's troop,
That marshall at your front;
Cut off supplies, and warfare dies
For want of nourishment.

Remember not your sorrows past,
Live in the present, well,
Let future years suggest no fears,
And on your blessings dwell.

MRS. SARAH M. WYMAN.

ANNIE'S TADPOLES.

A Story for the Primary Scholars.

BY MARGARET M. STONE.

Annie lived in a pleasant home in the country, within sight of a beautiful river, and the great blue ocean. From the windows of the house she could see across the salt meadows over to the lighthouse, out of which the light smiled to her every night; and nearer home were the garden and fields, where the horses, and cows, and hens, and peacocks lived. On the other side of the road was a pretty little pond, where the ducks paddled, and the frogs croaked. Annie loved the horses, and the chickens, and the parrots, and the ducks, and even the little tadpoles in the pond.

Every day Annie went to school, and the school was so far away that George, the black horse, had to take her there every morning. One day she thought she would carry some of the tadpoles to her teacher. So she went down to the pond, and found five little ones, which she put into a glass preserve-jar, with plenty of water, and took them to school with her. The teacher was quite pleased with them, and put them on the window where the children could see them every day. Then she wrote these little verses about them, which she called by a very hard name. Perhaps your teacher will tell you what it means:

BATRACHIAN AMPHIBIA.

Five little tadpoles
In a pleasant home,
All among the mud and water
How they loved to roam!

Five happy tadpoles
Playing in the sun;
Or, if the rain came,
Waiting till 'twas done.

Five little tadpoles
Once took a ride,—
Five little polliwogs,
Swimming side by side.

Five little tadpoles,
In the merry month of May,
Up at a window staid
All the livelong day.

" Queer place this," said they,
" But we don't much care;

Only, it seems to us
  All the people stare.

"Shouldn't think they ever saw
  A tadpole before.
Don't see why, though,
  For there's plenty more."

Five little tadpoles
  Growing very fast,—
Five great frogs, perhaps,
  They'll be at last.

SCHOOL PASTIMES.

RECREATION A MEANS OF DISCIPLINE.

Those who have had the care of little children cannot help noticing their strong martial feeling and love of military parade. The tiny boy with his first soldier-cap, made by the mother's patient fingers from some old newspapers, with his real or imaginary gun held over his shoulder, is a sight familiar to all. Take a class of children at school; say to them, "Sit up straight;" "Make a straight line;" you may be obeyed, but how much more readily, should you say, "Where are my little soldiers?" Instantly every form is erect, every eye looking front.

Last fall I was much troubled by many of the children coming late. I tried various ways to bring about better results, but nothing seemed very lasting in its effects. For a day or two matters would be better; then, as frequently happened, one after another would come dropping into the schoolroom, a minute or two after the opening of school, until there would be as many as five or six children late. It was discouraging; yet the children seemed sorry and would promise to do better. Sometimes a child would have a good excuse, sometimes none; often it was the fault of some one at home, frequently the child's own. Where coaxing and remonstrance failed, surely scolding would do no good.

"What shall I do?" I asked myself this question one night after school; my eye lighted on a toy flag placed over one of the pictures in the schoolroom; remembering the universal love of children for playing soldiers, I thought, "I have it." I went down town, purchased some fifty or more toy flags, together with a standard arranged to hold six or eight flags, the whole costing less than one dollar.

The next Monday morning I went to school early and arranged the flags about the room before the children entered. Upon entering the room, their attention was immediately directed toward this unusual decoration, and I was besieged with questions as to what we were going to do with the flags. I told the class we would form a little "Try Company"; there was a flag for each child who would try "not to be late, not to be absent"; and, in addition, I added, "will try to please and help his teacher." I told them we would try for one week; on Friday afternoon, during the half-hour allowed for recreation, every child who had not been "late nor absent," and had been "attentive" should carry a flag. We would decide which child had been the "best" through the week, and he should carry the standard. All were delighted, and it was a pretty sight that next Friday afternoon to see the happy faces of the children, as I read the names of those who could march, the beaming faces plainly showing how the children enjoyed their well-earned reward. Week after week passed, and yet this little vacation seemed a never-failing source of pleasure. It was enough to say to a child, "I am sorry you cannot march to-day, but you were late once this week." He was pretty careful the next week to be in season. Sometimes, if it were a very extreme case, and the child was not in fault, we would vote to excuse him, and it would have been hard to tell whether the child or the class derived the greater pleasure. Permission was frequently asked to bring clappers, drums, guns, soldiers' caps, etc., and frequently it was granted. The parents became interested, and aided the little ones in their efforts to earn the right to march with the "Try Company." Much has been said about using the "highest" motives in primary-school instruction; yet, taking children directly from home as we do, children who have had training as varied as their several dispositions, can we expect them to work all at once from the "highest" motives? Is it not better to *help* the little feet tread the right path by the promise of something pleasing in the end?

"Little by little" must be the primary teacher's motto, and the habits of punctuality, obedience, and uprightness, which the children are *unconsciously* forming, cannot fail to be of unlimited value to them when, as they grow toward manhood and womanhood, they are called upon to choose between right and wrong.

PRIMARY SCHOOL.

WRITING.

Our attention has lately been called to a very interesting series of copy-books for the little folks, prepared by Lyman D. Smith, an able penman and practical teacher. In these books the author gives a finely-graded and easily-progressive series of elementary lessons, and at the same time makes the writing expression of thought. The very first steps are as easy and pleasant for the pupils as are the first steps in reading; and while learning to form and combine letters, they are unconsciously using them from the start as a language medium. The author has very happily come down to the capacity of children, and has brought these little books right within the scope of a child's thought and language.

Writing can, by the aid of this series, be taken up as easily as reading, in the same natural way, and with the same advantages of easy and progressive grading. The child can start with lead-pencil writing in one of these little copy-books as soon as he begins the First Reader, and can learn to write just as easily as he learns to read. The author's method is to teach the letters as wholes,—to impress them upon the child's mind as complete pictures; as soon as one or two similar letters are learned, to teach the child to combine them, and thus to begin word-building in the very first lessons.

A great number of the easiest little words in the language are built up in the First Writing Book, and wherever possible with good grading, the words so associated as to suggest thought. The child's interest is awakened at every step, and he is led along almost imperceptibly into writing.

In his Second Writing Book, the pupil takes up phrase-building. The book is full of pleasing little word-pictures that will interest every one of the little folks, and that will make their writing a language to them.

In the Third Writing Book, for sentence-building, the child's plays and familiar objects of interest to him are woven into his copies.

All the way through this little series the children learn to write by writing thoughts, just as they learn to read by reading thoughts. The advantages of this natural method to young pupils are perfectly obvious. The monotonous and meaningless repetition of letters and words can never give life and interest to the writing-lesson. But the moment that writing is taken up as a language-medium, it has a natural charm like reading and speaking.

The use of graded columns greatly facilitates the author's language method. The columns gradually increase in width across the page, and afford a gradually-increasing pathway of effort for the pupil. The child is not kept writing down even columns, but accustoms his hand and arm to travel a little farther along each time, as he writes across the pages. These guide-lines are gradually removed as the children advance from word-building to phrase and sentence-building.

The arrangement of the copies is admirable. The books would serve for a language series, but the penmanship drill is complete. An initial or leading letter helps to build up some little word that is itself metamorphosed into a longer word, which breaks out afresh in some little phrase. It all seems like a play of words,—a little language-lesson; but, through it all, the author has had a distinct idea of some letter or combination that he has been giving to the pupil; first, as a letter or combination, then as part of a beautiful word, then as part of a longer word, and finally it blossoms out in a beautiful phrase.

How many removes is such practice as this from the wearisome copying of drill-letters in narrow boxes, page after page? In these books the writing-exercise is never lost sight of, but it all seems like play to the child, because his interest is continually kept up in the language,—the thought-pictures that glide right along with the copy.

The pupils are relieved in their first writing of the copies by tracing, and then gradually led to depend more and more upon their own efforts. The paper is adapted to the lead-pencil, but can also be used for pen-and-ink work. Appletons' Standard Lead-Pencil Course carries into writing the new ideas in education, and makes a strong appeal for popular favor.

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the
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OUR GRAND OFFER! In order to more thoroughly introduce our goods in the United States, we make the following unprecedented offer: Upon receipt of only **$7.00** and **this advertisement,** we will forward, all charges **prepaid,** and guarantee to reach you in good order, one of the above described watches, securely packed in a wooden case.

We can only send out **a limited number** of these watches at price named, and to protect ourselves from jewelers and others ordering in quantities, we will insert this advertisement in this paper but **one time,** hence, require you to **cut it out** and send to us with your order, that we may **know you** are entitled to the benefits of this offer. Under no circumstances will we sell more than **one watch** at above price to any one person, but if others are desired we will furnish them at regular catalogue price. Many of our agents sell this watch at from **$20.00** to **$35.00.** We will mail you a **catalogue** at same time we send watch, and feel sure you will be so well satisfied that you will show catalogue and watch to your friends, thus assisting us in selling other goods of **standard quality,** which are manufactured from new and original designs, and which we **guarantee** to give satisfaction. We will be responsible for money if sent by Registered Letter, P. O. Money Order, or Draft made payable to our firm. We will send the Watch C. O. D. with privilege of examination, provided you send **$2.00** to guarantee us against loss by express charges; but if you send us **full amount** with your order, we will **prepay** all shipping charges and ship watch on day order is received. As to our responsibility, we refer you to any Bank in this City. If you do not order at once preserve this advertisement for future use. If you send us **$1.00** extra when you order Watch, we will send a handsome Watch Chain and Charm made from a composition metal resembling **Gold.**

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SEED AND HARVEST.

BY E. O. ———.

When the balmy winds of springtime
  Blow their breath across the plain,
Melting off the snows of winter,
  Filling things with life again.—

Then within the earth's broad bosom
  Scatter we the precious seed,
Looking forward to the harvest,
  Providing for a future need.

And. as days of summer lengthen,
  How we watch with eager eyes
The slow progress of our harvest,
  Growing to a ripening size.

For when summer's heat is over,
  And autumn winds go blowing past,
If we've been faithful to our duty,
  The seed will bring good fruit at last.

Thus it is life's seed is planted,
  Planted in our youthful days,
And it grows into a harvest,
  As we go upon life's ways.

If we plant the seed of wisdom,
  And destroy the weeds of sin,
Happy lives and many blessings
  Is the reward we'll surely win.

No matter what our worldly profit,
  No matter in what place we go,
Our reward will be according
  To the kind of seed we sow.

Then as we sow good seed in springtime,
  Let us sow good seed in youth;
Always trying to be faithful
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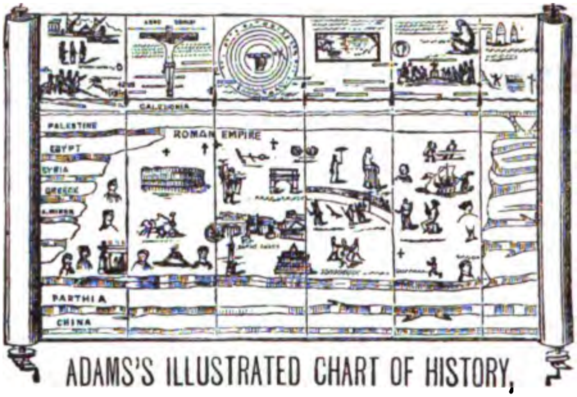

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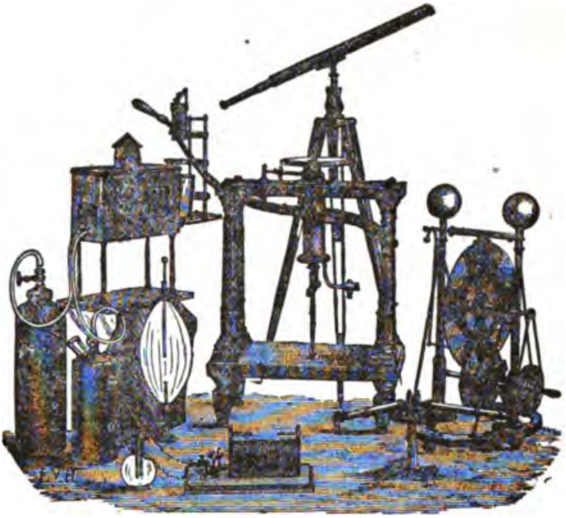

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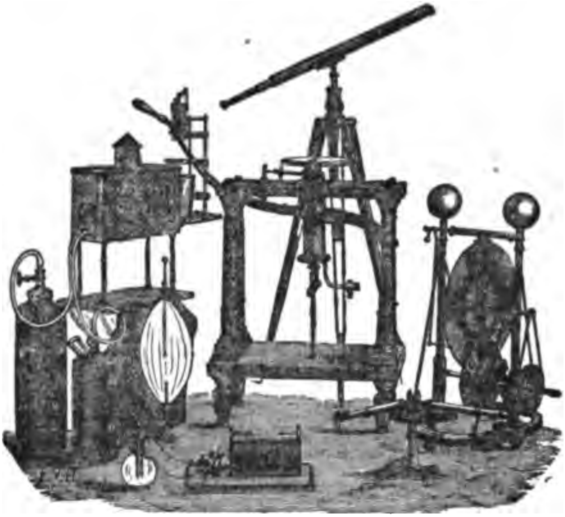

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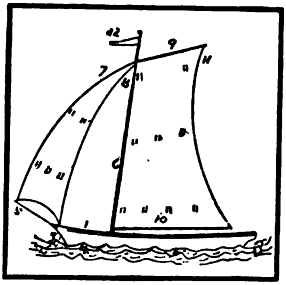

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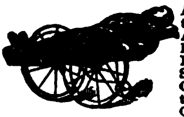

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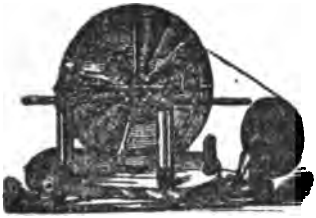

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THE

PRIMARY TEACHER.

VOL. V. NOVEMBER, 1881. NO. 3.

PHYSICAL TRAINING IN PRIMARY SCHOOLS.

BY A. E. WINSHIP, SOMERVILLE, MASS.

There are many reasons why modern educators should give their best thought to the physical and mental capabilities and necessities of young children, adjusting their methods and adapting their zeal to a well-balanced development of both phases of the child's nature while in the primary school. Mental discipline, as the term is generally applied, has no legitimate place in the training of the average primary-school pupil. The mind must be directed with the utmost delicacy lest it be unduly stimulated; yet it must not be neglected, but simply cultured with an eye to its greatest ultimate vigor when the physical system is perfected as an exhaustless reserve-power. The teacher who gets good results in reading, writing, and the tables, by dwarfing the body, cramping the limbs, and bending the shoulders, as she spurs the child on, inciting and arousing the mind to activity beyond all reason, is guilty of fatal indiscretion.

It is unnatural, unhealthy, enervating to body and mind for a young child to sit rigidly at a desk, bending over book or slate for an hour and more, fearing to rest himself lest he disobey the rules. Much as the mind and heart need early cultivation, the youth-life is the formative period of the physical life of man. The intellect can be trained after the body is matured. Men reform, morally, late in life, but the physical life is fixed before manhood. Bowed shoulders, cramped lungs, ruined eyes, weakened backs, are seldom or never restored in after-life.

Primary schools have no right to impair, warp, or check the physical life of the child upon any plea of higher necessity. It must hold itself responsible for the highest possible improvement of the body. Whoever is responsible for the bad drainage, filthy out-houses, and faulty ventilation of school-rooms, which eventuate in the ruined health of children, ought to be indictable; and not only they, but whoever lays out a course of study with no definite reference to the physical necessities of the child, as well as the teacher who cruelly holds the little children to their tasks, neglecting to supply such physical exercises as call into action the various muscles of the body, prompting such circulation as shall renew the physical strength, freshening and stimulating thought.

The recess-life of the playground does this for the few in good weather; but it is a notorious fact that the undirected recess is utilized, physically, only by the older, hearty, robust boys and romping girls, who have the less need of such exercise, while the frail girls and over-studious boys loiter in the entries, or saunter aimlessly about the yard. Most small children demand physical exercise so directed and conducted as to keep every child vigorous, fresh, and animated. How shall this be done?

First: Gymnastic exercises, to be of highest service, must be taught like any other subject, giving new exercises as soon as an old one is learned. As soon as an exercise is learned, it has lost the major part of its value, the greatest good coming from the mingled discipline to mind and body in the process of learning the order of movements, striving for skill and grace in the performance of them. The school inevitably becomes indifferent to an exercise of which it is weary. An exercise once learned may be frequently brought into service by way of review and for variety, but there should never be a week in which the school is not being taught some exercise in gymnastics.

Second: All teaching in this department should be systematized with a view to the highest physical development. Gymnastics have been a failure whenever they have been an aimless diversion with no connecting links. There should be a scientific and practical system of gymnastics so adapted as to develop muscular strength, flexibility, and grace in every direction required of the perfect man or woman in business or society, doing at one and the same time the work of physical culture and social improvement. Such exercises, well taught and perfectly practised, would greatly enhance the value of school-training, as well as make sweeter the influence of the school upon the child's disposition.

Third: During these exercise-minutes the room should be thoroughly ventilated. Entire change of air in the school-room should be had as frequently as may be. No system of artificial ventilation can do away with this necessity.

Fourth: One-half the recess-time ought to be used for gymnastics,—in the yard when the weather permits, in the basement or hall in foul weather. The best-disciplined school the writer ever saw, best in spirit of obedience and in absolute obedience, was the largest boys' school in San Francisco, and there also was the finest recess-gymnastics ever witnessed by us. The large double yards were directed by the principal from the roof of the sheds, while the other teachers were in the yards executing the will of the leader. When the latter half of the recess is thus utilized, the pupils come into the school forgetful of the playful schemes which they now so often transfer from the yard to the room. Ordinarily the principal comes in contact with the pupils outside of his or her room only as a dreaded disciplinarian; but in this way he meets them as a leader in their concert sports, for as such these exercises may be made.

Fifth: There should be little, if any, vocal accompaniment, now so common in our primary schools. It is impossible to do both well. It would be as reasonable to expect a bird to sing on the wing, as for little children to sing or recite while taking physical exercise. If the exercise is of any value, the voice will be injured. It is the popular way now in the primary schools, but it is none the less vicious.

Sixth: Physical exercises ought to be taken standing. In these days, when recitations are largely conducted with the children sitting at their desks, there is too much sitting in school; and since the demand is for erect posture, graceful bearing, and flexibility of limb, these can be best secured upon the feet.

We add a few special directions. The primary aim of physical exercises in school is the acquisition of health, but this is secured as well when reference is had to the other important ends; *viz.*, securing prompt, explicit obedience to orders; erectness of posture and ease of bearing; flexibility of muscle in the hand and fore-arm; graceful movement of hand and arm; ease and grace in step; strength of muscle; expansive power of the chest; strength and control in the muscles of the chest and abdomen.

Exercises should be frequent and brief. The order of teaching should be to secure instant and complete attention; uniform, quiet, graceful movement in facing the aisle for standing; noiselessness in placing the feet properly, rising uniformly, facing to the front with precision of movement; assuming an attitude at once erect, easy, natural, with shoulders back, chest full, head erect and front, arms in natural ease at the side, body square, limbs straight, weight on the ball of the left foot, right foot slightly behind and at an easy angle.

I have been thus definite in these directions, so familiar to most teachers, because few teachers teach small children these things correctly. None would object more than the writer to any attempt to insist upon this attitude being preserved for any length of time by the child, but it is highly essential that each of these suggestions be carried out until these movements and this attitude become second nature, making them graceful and easy through life.

Hand movements of fingers and wrist, rapid and forceful at the side and with the fore-arm extended in front with the elbow at the side, will secure flexibility and strength of the muscles brought into play.

Arm movements, too varied and important to be treated in this article, should follow, in a manner and upon a plan calculated to strengthen the entire system.

Chest and arm movements, for the development of the chest and the strengthening and controlling of the muscles involved, should be carefully applied.

Foot movements are always the most difficult to secure, and yet they are indispensable to any complete success, and should receive close attention at the hands of the teacher.

As a rule, it is better for the teacher to count than to have musical accompaniment in the primary school, for with music the temptation is to extend the exercise to long.

There is no exercise in the lower schools more essential than appropriate, well-directed gymnastic exercises, but they require as definite preparation and as close attention on the part of the teacher and pupil as any branch taught. Committees and parents ought to insist upon it, and teachers should devote themselves to its successful introduction.

◆

OUR GREAT HOME.

[*Lessons Preparatory to the Study of Elementary Geography.*]

BY KATE L. BROWN, WAKEFIELD, MASS.

III.

At the end of every lesson the children copy on their slates the outline that has been put upon the board. This outline is again copied very neatly into the blank books, and serves as the basis of various lessons. For example, the pupils learn both to write and spell the words, to put them into sentences, and to form simple definitions, or rather descriptions of the objects which the words represent. At the beginning of each lesson the teacher spends a few moments in calling for these descriptions.

Teacher.—Who will tell me what a spring is?

Guy.—A spring is water coming out of the ground.

T.—What is a brook?

Maud.—A brook is water running along.

T.—Through what does it run?

Maud.—Why, through the ground of course.

T.—Now put this last idea with your description.

Maud.—A brook is water running along through the ground.

These descriptions must not be considered as definitions, — in fact, definitions have no place in an elementary course. They will of necessity be incomplete, but if they honestly represent the child's idea they should be accepted.

WHAT THE CHILDREN SAW FROM THE SCHOOL TO THE DEPOT.

T.—What did I ask you to do for to-day's lesson?

Ernest.—You asked us to notice all the things on the way from the school to the depot. May I begin?

T.—Yes, you may begin.

Ernest.—After we leave the school and go down Poplar street, the first building on the right is the iron-works.

T.—You have all been to the iron-works, and now I shall expect to hear a great deal about what they do there. You may begin, Ruth.

Ruth. — They have very large furnaces there, and the fires in them are so bright they dazzle the eyes. It hurts my eyes to look in when the doors are open.

Guy.—The workmen have large flat shovels, on which they put square cakes of iron. Then these cakes are slid into the fire and stay there until they are red hot.

T.—What do they do with them then?

Lilian.—They push them between some great rollers, and the cake comes out in a strip. They do this several times, and the strip comes out longer each time. When the strip is long enough, they put it on a pile of other strips to cool. When it has cooled, it is black instead of red.

T.—Very well, Lilian; you have been to the works often, I guess.

Lilian.—Oh, yes! Claud and I go every few days. They belong to our uncle, you know.

T.—Perhaps Claud can tell us in what form the iron is found first, and how it is made into what we know as iron.

Claud.—It comes in rocks, — ores they call them. The furnaces are filled with pieces of ore, and heated, and the ore melts and runs out. Sometimes it runs into grooves in the stone floor. When it cools it is taken out in the shape of bars,—pig iron they call it.

The teacher shows the class some specimens of iron ore.

T.—We must leave the iron-works now, and go on.

Bessie.—After we leave the "works," we see a great many houses where the people live who are employed in the iron-works. There is a school-house, too.

Austin.—The next house is the Orphan's Home. Poor children live there who haven't any home. Then next is the "Print Works."

T.—What do they make there?

Harold.—Calicoes.

T.—Can you tell me out of what they make calico?

Harold. — Cotton, I guess. Grandpa, down South, has a cotton plantation. He sent me some cotton-balls once; I brought them to school.

T. — Yes, we remember the pretty, puffy balls. Some day we must have a lesson just on cotton alone. The cotton is spun into threads, and these threads are woven into cloth. When you were kindergarten-children you used to weave paper-mats, carrying the strips under, then over. Now all articles for clothing are woven this way, only it is done by machinery. Some of you have on Madras gingham dresses, how does the gingham look on the wrong side?

Mabel.—Just the same as it does on the right side.

T.—Does a calico look the same on both sides?

Dolly.—No; it is plain on one side. What makes it?

T.—Can any one tell?

France. — I've noticed one thing. I had a calico apron once, and when it got old the pattern all faded out, and the apron was almost white. Now my gingham dresses dont do so. Why is it?

T.—It is this. The pattern in calico is stamped on one side only. The pattern in gingham is woven so that part comes on the wrong side, and part on the right, and a pattern is formed on both sides. What comes after the Print Works, Adèle?

Adèle. —Some stores, the harness-shop, the bake-shop, the market, and the dry-goods store.

T.—I want a little told about each store.

Annie.—They make harness out of leather.

Mabel. — They make bread, cake, and pies at the bake-shop. The baker takes them round to sell in a cart drawn by a horse all painted red. (The children laugh, but Mabel does not see the joke.)

Marian.—They sell meat at the market, and fruit and vegetables.

T.—What kinds of meat?

Marian.—Veal, beef, mutton, and pork.

T.—Who can tell what animals furnish such meat?

Bertram. —Veal comes from little calves, beef from cows and oxen, mutton from sheep, and pork from pigs.

Bessie.—They sell cloth, silk, ribbon, lace, and buttons at the dry-goods store.

T.—Ruth, you may go on.

Ruth.—The churches come next, on Grosvenor Square. There's St. Peter's, the Catholic, and St. Luke's, the Episcopalian. Then down Forrest street, there is the Presbyterian.

T.—Are there any more churches in town?

Daisy.—Oh, yes! there is the Union Street Methodist and the Congregational Church, and on Elm street there is the Unitarian Church and the Baptist.

Adèle.—Forrest street is all houses, but Winter street, which it joins, is the depot street. The depot is at the head.

T.—We must stop right here. You have all been very observing. To-morrow I want you to tell me the different ways in which people get a living.

OUTLINE.

Iron Works.
School-house.
Orphan's Home.
Print Works.
Harness Shop.
Bake Shop.
Market.
Dry Goods.
Churches.
Depot.

FIRST STEPS IN NUMBERS.

BY W. W. SWETT.

II.

VIII. At this stage, a slate exercise may be prepared, which shall involve nothing not already learned:

$$\begin{array}{ccccccccc} 2 & 4 & 3 & 3 & 2 & 4 & 4 & 5 & 6 \\ 2 & 2 & 3 & 2 & 2 & 4 & 2 & 2 & 2 \\ \hline 4 & 6 & 6 & 5 & 4 & 8 & 6 & 7 & 8 \end{array}$$

This is simply to show that the answers are to be set under the numbers added, and will require no repetition.

Follow it with one that will introduce the idea of carrying:

$$\begin{array}{ccccccccc} & 9 & 8 & 7 & 6 & 5 & 4 & 3 & 2 \\ & 9 & 8 & 7 & 6 & 5 & 4 & 3 & 2 \\ \hline 1 & 9 & 7 & 4 & 3 & 0 & 8 & 6 & 4 \end{array}$$

Having written the correct answer, let the pupils puzzle over it awhile. Ask them to tell how these answers are obtained. Attention is thus secured to just what it is desired to teach them. The first three answers will readily be accounted for, and possibly some one will suggest that the 0 is a part of 10. If such an answer can be drawn out, the lesson is progressing well.

Write 10 by itself, and say, "Yes, the 0 is a part of 10, and is written under 5 and 5. There is room for only one figure there."

One may pause a moment, and perhaps some child will see that the other figure is added to the 12, and that the 3 is written, and 1 again carried. No great effort should be made to draw out the answer. If it is not discovered, it is best to state clearly that the 1 is thus added, and see if the same reasoning will be applied to the next couple.

When the principle is understood, let the pupils make examples of their own, mixing the numbers, but always observing to write them as above, in couples.

Let two look over each other's slates, and see if an error can be found.

Let 2 be written under some numbers of the upper row, and others be written as above. State this direction plainly, and the children will cheerfully fill their slates with examples, learning thoroughly the little combinations thus far made, and preparing the way for a knowledge of the principles of Notation.

If the preceding suggestions have been carefully considered, the child can now not only count money,—excepting the three-cent piece,—but can add readily the little examples given, without counting one by one.

Numeration may be taught him, step by step, as there is occasion for it, and the principles of Notation will be acquired gradually, without any conscious effort on the part of the child.

"How many are 7 and 7?"

That requires no counting, and scarcely a thought; and may be followed by, "How many are 7 and 6?" The question may be so uttered as to suggest that the result is one less than 14. Otherwise, the teacher should plainly state the fact, and expect to secure similar examples from her pupils. Some little learner will surely be ready, after a minute, with 9 and 8, or 5 and 4.

Write these down as given, accepting only those consisting of two single digits, and let one and another state how the answer is obtained.

The entire set will soon be added to the little stock of knowledge already obtained, and cards may be prepared covering this new ground. It would be well, also, to drop the 2's beyond 9 and 2 (see VI.), and let it be understood that in the little exercise with these cards, no answer to be given by a pupil will contain a number larger than 9.

X. This new knowledge will furnish other examples for the slate. That there may be no confusion, state carefully that 2 may be placed under any number; that numbers alike may be written one under another; and that numbers like those just learned (in IX.) may be written.

XI. There has thus far been no occasion of carrying more than 1. After a sufficient number of examples have been performed as above, try the following puzzle:

$$\begin{array}{r} 6\;9\;7\;8\;4\;5\;3 \\ 6\;9\;7\;8\;4\;5\;3 \\ 2\;2\;2\;2\;2\;2\;2 \\ 2\;2\;2\;2\;2\;2\;2 \\ \hline 1\;8\;4\;0\;1\;3\;5\;0 \end{array}$$

Let the class have ample time to examine this, only suggesting that they should begin at the top to add.

The chief feature of this experiment may seem almost too trifling. It is merely to discover if a child, who has learned that in answers from 10 to 19 the 1 is to be added to the sum of next column, will infer that from higher answers 2 is to be carried. The result is before him in the fifth column; the 2 has been added; and he will, of course, perceive it. It is better to encourage even so slight a degree of self-dependence, than that the child should be told in so many words, "Always carry the left-hand figure."

PHYSIOLOGY FOR PRIMARY CLASS.

BY MRS. LOUISA P. HOPKINS.

VII.

THE EYE.

Teacher. — Each of you look at your neighbor's eye steadily. Is the eye flat or rounded? It is rounded. Yes, it is a ball. You may have seen a fish's eye: it is smooth, hard, and slippery. Do you see a little mirror in the middle, with your own face reflected in it? You do. That mirror is a little, convex, transparent surface, like glass, over the open end of a tube that leads into a dark chamber, where any impression of your face is spread upon the walls as it is upon the photographer's slate, and that picture is carried by a nerve to the brain, which perceives it and sees your face. So it is with all that is before the eye. That black hole is called the *pupil*, the glass-like surface over it the *cornea*. Do you see the blue, or gray, or brown circle outside the pupil? That is the *iris*. Describe it, Fanny.

Fanny — It has little lines spreading over it toward the outside, like the spokes of a wheel.

Teacher. —Those are muscles to draw the edges closer together and make the pupil, larger when it grows darker so as to give room for more light to go into that dark chamber and make the picture clearer on the walls. What else do you see, Alice?

Sallie. —I see the pupil grow smaller and the blue part grow wider.

Teacher. — There are some other circular muscles which draw the iris up over the pupil like strings in a bag, when the light is too strong. Roll your eyes around. Can you?

All.—O yes, every way.

Teacher.—There are muscles and cords holding the round eye-ball in its socket, which can act like the cords and muscles in any part of the body and turn the eye as we will. Did you ever see a person cross-eyed, or with eyes turned too much toward the nose? Something was wrong with some of the muscles, in that case. If you use your eyes too much, you may hurt these muscles; if you hold your book too near, you will hurt the eye-ball, making it grow convex If you keep glancing too rapidly from a distant to a near object, you will-tire and weaken one of these muscles and grow more and more near-sighted. Always heed the caution of those who have had experience in the use of the eyes, for it is such a terrible thing to have the eyes hurt or impaired by abuse. Hold your head up naturally, as you sit erect, and read with the book at just that distance where you read easily. Do not read or look with one eye only, but with two, as is designed for you. Bathe the eyes with fresh, cold water; open them in water every day; rest them when they feel tired. If you are at all near sighted, practice looking at distant objects. Do you see the litttle blood-vessels roll over the eye-ball?

All.—We do.

Teacher. — Don't touch the eye-ball. See how hard the eye-lid tries to prevent you. It is not meant to be touched. Never try to read or work by too dim a light, nor to look directly at a very bright light. Why do you have two eyes?

Prescott.—To see all round a thing.

Teacher. — If you look with one eye, a thing looks more flat; with two eyes we see it from two different points at once. Look at this stereograph,—two pictures of one thing,—are they exactly alike?

Lottie.—This one has more of the house on this side of the picture.

Teacher.—Do you all see that there is a very little more of one side in one picture, and of the other side in the other picture? That is the difference between the thing we see with our two eyes. Try experiments, first with one eye and then with the other. You find you do see things a little more or less on one side, with either eye. So we get a truer view of the whole thing with both eyes at once. The nerve which carries the picture to the brain is the *optic nerve;* it has a branch to each eye. There are two little transparent lenses for the rays of light to pass through before the impression reaches the optic nerve. You must learn more about light, and how it waves, before you can understand fully how the image which passes into the pupil through the convex lens over it, the cornea, reaches this nerve.

WRITING-LESSONS FOR LITTLE FOLKS

BY LYMAN D. SMITH.

V.

Children can learn to write as easily as they can learn to read, if they have an equal chance. In many of our graded schools slate-writing is begun and carried right along with the reading. The former serves its best purpose in supplementing the latter, and in making the child familiar with the script as well as the printed forms. He sees the word *cat* written on the blackboard, and tries to draw the word on his slate; no doubt, at the first the result is a mere scrawl; but it is his first reaching-out after the script form, and the very effort to produce it serves to impress the form more vividly upon his mind. By-and by his daily practice in drawing words on his slate enables him to translate his printed lessons into script that is more or less legible. It is the child's first writing, and to him truly wonderful. It can be read by himself, and perhaps by others, and possesses the charm of being a language-medium.

But all this time he has been having in his reading the great advantage of graded lessons, either from a chart, or a First Reader, or perhaps they have been selected by his teacher, while his writing has been promiscuous. But he really needs, at the start, graded lessons in his writing just as much as he does in his reading. His slate-writing makes him acquainted with the script forms, and assists his reading and spelling; but something more is needed for him to *learn to write.* Accustom children early to the use of right materials, and give them daily writing-lessons as you give them daily reading-lessons, and their writing will thus become as easy and natural to them as their reading. At present they are doing too much slate-writing, and are kept back too long from pen-and-ink practice. Lead-pencil writing is the proper introduction to the latter, and should be begun in the very lowest grades. The letters should be given in classified order for the child to practise, so that each step prepares for the next succeeding one, and every step is progressive. The copies should be so arranged as to lead children by easy efforts into writing.

These little pupils need ruled lines to educate their eyes to the proper height and width of letters. They need a softer material (paper) to practice on, so that they can learn the real writing-movement, sliding the hand on the edges of the nails while the fingers write. Any amount of slate-work will not give the writing-movement, and too much slate-practice will prove a hindrance to their acquiring it. As a special teacher in writing in the public schools, I have found the greatest obstacle to success with pupils in the primary department has been their slate-writing. Two special lessons a week would, in many instances, hardly suffice to overcome the vicious habits of pen-holding and movement contracted and confirmed by slate-writing. My constant injunction to the teachers has been, "Watch the slate-work; look out for short pencils and cramped fingers." The slate-writing tends directly to a rigid method of pen-holding, and to cramped and unnatural movement, habits difficult to be overcome later on. There is no chance for any free and easy movement; the child can only learn *to draw* the forms of the letters.—not *to write*. Pupils in the lowest grades need primary writing-books just as much as they need primary reading-books. It is astonishing how quickly, under good instruction, children learn to write. Begin writing in the lowest grades, and start on the right method, and writing will become as natural a process to the child as reading. Whenever a pupil is prepared to start with the First Reader, he should be allowed to begin his first writing-book. His writing-lessons should follow right along with his reading-lessons; and the same pains should be taken with the former at the very start as with the latter, because he needs to write as well as to read his language at an early age.

Remember that the child is laying the foundation for his handwriting, and his chances of success are far better, if he has the right help at the right time. While reading-books have been brought down to the youngest class of pupils, writing-books have signally failed to meet the child's wants. They have been unsuited in grading, aud the writing has been wholly divested of the charm of a language medium. Since natural methods have become so universal in primary instruction, slate-writing has been made the accompaniment of the reading-lesson. This is desirable, and a step in the right direction; but it should not be depended upon for the real primary writing-lessons. While the writing should be taught as a language medium, the mechanical process should not be overlooked. Easy execution of the written characters by the hand depends upon the careful training of that instrument, in the same way that easy enunciation of words depends upon careful training of the vocal organs. To train the hand and arm properly to write requires a fair chance, good materials, and cultivated effort on the part of the teacher. Laying the foundation of the child's handwriting by simply making the child's writing-lessons an accompaniment to his reading-lessons will not answer the purpose. Do this, and do more. Give him writing-lessons besides, when the writing is taken up *per se*, and not as an appendage to some other lesson. Distraction of effort is not favorable to progress. More than one-half the awkwardness of children in writing is induced by neglect of early training in the mechanical process, and by excessive slate-writing.

TRUE STORIES, AND HOW TO TELL THEM.

BY MRS. SARAH M. WYMAN.

II.

METHODS.

John Wesley once heard his father say to his mother, "Why do you tell that blockhead the same thing twenty times?" and she replied, "Simply because if I had told the blockhead the same thing only nineteen times, I should have lost my trouble."

We would cultivate in our pupils the habit of retaining in the memory whatever is once told them. Still, if we expect *all* to do this, we shall often be disappointed. With many, the thing must be repeated again and again, and the successful teacher exerts her ingenuity in presenting it in various ways, so as not only to keep up the interest of the pupil, but also to throw light upon anything that may be but dimly apprehended in her mind.

A distinguished writer on history once said: "Knowledge of an event is worthless, if the time and place of its occurrence are unknown." Yet the time and place, with most children, are just the things forgotten. The story is remembered. To locate and individualize the story is the aim of the accurate teacher; and her study, how to do it most effectually.

To make sure of these and other particulars, it was proposed, at the close of the last lesson, that the pupils should write questions upon it. These are brought before the class for correction. The most papropriate are selected, suggestions having been made, if necessary, and placed upon the board.

Teacher.—Now, children, you may all stand, and, commencing with Annie, may alternately read the questions on the board. Whoever is not able to answer the question he reads, may sit down. In this way, you will know how well you remember what I told you yesterday.

This is repeated several times, different ones commencing the questions, and care taken that every answer be correctly given, although necessarily in different words, according to the different language which pupils use in the expression of thought. The scholars then copy the questions in the back part of their blank-books, and write the answers under "*Chapter I.—Mound-builders.*"

Frequent reviews are taken upon each and all the lessons. By pursuing this method, or some other of equal or greater merit, which may suggest itself to the teacher, whatever is worth remembering is so learned as never to be forgotten.

III.—MAMMOTH MASTODON.

Teacher.—Now, children, I'm going to tell you about the animals that inhabited this country a great many years ago. The wild reindeer, which in its native snows is seldom found by civilized man, once lived in the United States. It even roamed as far south as Kentucky. How many know where Kentucky is? (Hands quickly rise.)

Teacher.—What would you think, James, if you were to go out into the woods and see monkeys leaping from tree to tree, nibbling the leaves and catching the nuts in their paws?"

James.—I should like to see them.

Teacher.—Where might we now find monkeys doing this?

James.—In South America.

Teacher.—Yes; but monkeys once lived here in North America. Where are the largest monkeys now found?

Monroe.—In Africa.

Teacher.—In Africa is found the one most like man. It is called the Chimpanzee. (Writes the name on the board.) Elephants are also found in Africa; and where else?

James.—In India and Persia.

Teacher.—Yes; the Shah of Persia, the title there given the king, sent to Peter the Great the skeleton of an elephant which measured 16½ feet in height, and it is now in the museum of St. Petersburg. (Class questioned about Peter the Great and places mentioned.) There is no record of a larger one ever having been known. But animals similar to the elephant once went marching through our forests, treading down trees and tramping over the leaves and shrubs.

Samuel.—How do we know such animals lived here?

Teacher.—I'm very glad you asked that question, Samuel. No written history tells us about them; we never heard of any one who ever saw them. Can you think of any way in which we could know about these animals, or that they ever lived in the United States? (No satisfactory answer is given.)

Teacher.—Well, I will tell you. Their bones have been dug up out of the ground. In the Western States men are constantly finding more bones, and that is the way we know they once inhabited this country. The most remarkable of all the bones that have been found are those of two immense animals similar to the elephant, but much larger than those of any known elephant now living. Some of them were almost as large as the elephant sent to St. Petersburg. They are called "mammoth and mastodon." One of their tusks was 11 feet long. Many varieties of the rhinoceros once existed in North America, some of them as large as elephants. Is the rhinoceros a tame animal?

Maud.—Oh, no! very ferocious.

Teacher.—Perhaps you have heard about Dr. Livingstone, who traveled in Africa? (Several nod assent.)

Teacher.—He says in his book that they attack a man after they are mortally wounded. He relates that he saw on the thigh of one of his companions a wound five inches long, made by the sharp-pointed horn of a white rhinoceros. We can scarcely realize that such savage animals once roamed through our forests. But they must have lived here, or their bones would never have been found in our soil. A great variety of wild horses once existed here, and there have been dug up the bones of animals not now found in any part of the world.

Monroe.—Was it before the Mound-builders?"

Teacher.—Yes; probably many years before. It is doubtful if the Mound-builders ever saw the mastodon, or they would have left some likeness of it, such as has been found of the birds and beasts they knew.

James.—Did any men live here then?

Teacher.—Probably there were men on this continent then, because the bones of human beings have been found mingled with those of the animals.

Grace.—What became of all the animals?

Teacher.—We can hardly tell. In South Africa the men of a village go out to hunt an elephant, and in spite of his great size they kill him with bows and arrows. In some such way those immense animals on our own shores may have been killed But the men who lived at that time have passed away; the animals have perished, and we can never expect to obtain much positive knowledge about them.

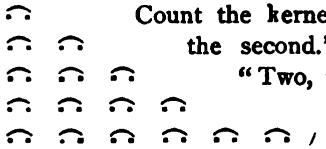
LANGUAGE NUMBER LESSONS.

BY ANNA B. BADLAM.

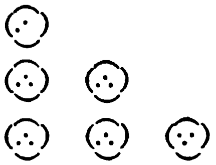
VI.

As soon as the children understand clearly what is meant by 2's, 3's, 4's, 5's, etc., give little slate-exercises in forming the groups.

"We will call our slates corn-fields, and we will show by dots just where we drop the kernels of corn" (the blackboard to be the teacher's slate). "We will call the place where we drop the kernels, a hill; let us put 2 kernels in each hill." "Plant one hill as I do." "Let us have two hills in the next row." "Three in the next," etc. The work standing thus:



Count the kernels in the first row." "Two." "In the second." "Two, four." "In the third.' "Two, four, six"; etc.



Or, if the work be on 3,—"Let us make apple-pies this morning." "We will use three apples for each pie." The work standing thus:

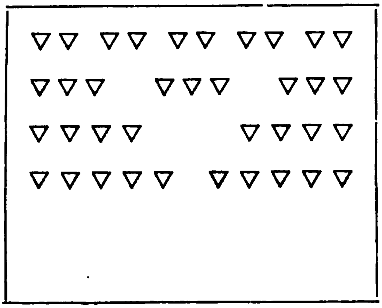
With the children at the table: "John, take two 3's; Milly, two 5's; Katie, five 2's;" etc. When this has been done, and the results given: "Add one more counter to those you have." When the answers will be given: "Two 3's and 1 are 7." "Five 2's and 1 are 11.

"John, how many counters have you?" "Seven." "How many 3's in 7?" "Two 3's, and 1 counter over." "How many counters have you, Milly?" "Eleven." "How many 5's in 11?" "Two 5's, and 1 counter left over?"

Give little questions to test the children's conception of the work, as,—"3 buttons on 1 pocket, 3 on another, and 1 on the belt?" "Two bunches of cherries, 3 in a bunch, and 1 more cherry?" "Two little girls had 5 pieces of candy; they wanted to divide it; what was left over the dog would have: how many pieces would each little girl have?" "How many pieces would the dog have?" etc. Or, "Fannie's mother had 9 apples; she used two for each pie: "how many pies could she make?" "How many apples would be left to make a saucer-pie for Fannie?"

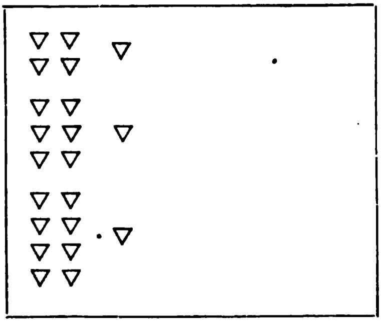
Arrange on one side of a sheet of bristol-board, one-inch pieces of colored paper (they may be arranged with reference to teaching harmony of color); this card to be used for general reference and review. The children reciting:

“One 2 is 2; two 2's are 4: three 2's are 6;” etc.
“One 3 is 3; two 3's are 6; three 3's are 9;” etc.
“One 4 is 4; two 4's are 8.”
“One 5 is 5? two 5's are 10.”
“2 in 2 once; 2 in 4 twice;” etc.
“3 in 3 once; 3 in 6 twice;” etc.
“4 in 4 once; 4 in 8 twice.”
“5 in 5 once; 5 in 10 twice.”



Arrange the other side of the card, the children reciting:

“Two 2's and 1 are 5.”
“Three 2's and 1 are 7.”
“Two 3's and 1 are 7.”
“Four 2's and 1 are 9.”
“Two 4's and one are 9.”
“Three 3's and 1 are 10.”
Or, “2 in 5 twice, and 1 over.”
“2 in 7 three times, and 1 over.”
“3 in 7 twice, and 1 left over;” etc.



Send the children to the table; distribute the cards of the “number-alphabet,” numbers from 1 to 10; hold the large card 1 before the class: “Take so many rows of what your card tells you.” “How many rows must you take?” “One.” “John?” “One 7 is 7.” “Mollie?” “One 5 is 5.” “George?” “Once 6 is 6.” (Allowing the children to use both expressions: “One 7,” and “once 7,” etc.) Or, “Fred, how many counters have you?” “Seven.” “How many 7's do you find in 7?” “Julia?” “8 in 8 once.” “Bertie?” “Ten in 10 once.” (See that no child holds a number higher than 5. Substitute 2 for 1 with the large card.) “Take this number of rows of what your card says.” “Joseph?” “Two 3's are 6” “Moses?” “Two 5's are 10.” Or, “Lizzie, look at your card; see how many 5's you find in your 10 counters.” “Harry?” “I find two 4's in 8;” etc.

Write on the board $3 \times 2 =$; $5 \times 2 =$; $4 \times 2 =$; $6 \div 3 =$; $8 \div 4 =$. Point to any one, asking the question, “Twice 3?” “3 in 6?” (allowing the children to volunteer the answers.) Or, “Children, take 2 counters, separate them into two groups.” “Put them together.” “Leave half on the table, while you take the other half in your hand. “Tell me how many you had at first on the table?” “What is half of 2?” “Take 4 counters, put half in one row, half in the other.” “What is half of 4?” etc.

Give little questions, as,—"I give you 4 cherries; you may eat half now, and half at recess?" "I had 6 cents; I spent half of them for an orange?" "Willie had 8 fire-crackers; he set off half of them at once?" "I have 3 peanuts; they are only half of what I had this morning?" "John has 10 buttons on his jacket, but Fred has only half as many on his?" "My hen had some little chicks, she has 3 left; they are one-half what she had at first?" "I am thinking of a number twice as large as 3?" "I think of a number half as large as 8?" Teach the term *thirds*, *fourths*, and *fifths*, when it seems practicable.

Distribute the cards for the children, numbers 1 to 10: "Think, children, whether your number is like mine, twice as large, half as large," etc. (holding up my card as 4). "Mary?" "My number is 8; it is twice yours." "Jennie?" "My number is 2; it is half as large as yours." "Eva?" "My number is 5, it is once yours, and 1 over.

Or, call a row of children before the class, let each child keep his number covered from sight. Select any child to whisper his number to you. "Children, Fred's number is twice mine; what is it?" "Herbert?" "I think it is 8." "Right; take his card." "Children, Joseph's number is half mine; what is it?" "Lucy?" "2." "Yes, you may take his card." (The child who holds the most cards at the end of the game to be allowed some little privilege, like gathering the cards, or giving them out for the next lesson.)

Select from the large cards any two cards, as 2 and 3. "We will think about these two numbers." What can we do with them?" "We can put them together; 3 and 2 are 5." "Louie?" "We can take 2 from 3; it will leave 1." "Mollie?" "We can take 2 three times; three times 2 are 6." "Sammie?" "We can take 3 twice; twice 3 are 6. "Robbie?" "We can find 2 in 3; 2 in 3 once and 1 over." Place on the board the expressions, $3 + 2$; $3 - 2$; 3×2; $3 \div 2$. Pointing to $3 + 2$, let each child of the division work with his pin-ball; watching to see if each child understands the use of the signs +; −; ×; ÷.

Vary the lesson, after a lesson or two, by letting each child take a separate question, working out the result each time with the pins. When this can be done readily, put aside the pin-balls, point to any question, as 2×3, $6 \div 3$, etc., letting the children volunteer the answer to be written on the board.

Or, write simply any two numbers on the board, as 5 and 2, using any sign as +; erasing that, substituting −, or ×, or ÷, at will. Testing in this way the children's comprehension of these signs.

Much care must be taken not to expect too much from the child. The board-work should simply be the expression of all he has been doing with the object. Then the dreaded bugbear, the multiplication-table, becomes a living thing to the child, he needing only daily practice to make him familiar with all its problems. Intelligence and Memory are combined, and the result cannot be other than satisfactory.

PRACTICAL LESSONS IN THE KINDERGARTEN.

BY MRS. MARIA KRAUS-BOELTE.

XIX.

PERFORATING.

For instance, let the child make a perforation in the first place where the lines intersect; skip the next one on its right side; prick in the third intersection; omit the fourth, etc., until a line from right to left is thus finished. In the second, and all the following lines, exactly the same process is repeated, so that the perforations are under the perforations, and lines intersected that have been missed are also below each other in a line. In this manner perforated vertical lines appear which are two squares parallel to each other.

In the next step the child will be directed to perforate in *two* intersections of lines, side by side, and skip the third one; perforate the fourth and fifth, and omit the sixth, etc,; this is repeated in each succeeding line,—perforations under perforations, omissions under omissions,—until the card is thus filled. This results in two vertical lines, termed "car-tracks," by a child, each "track" two squares distance from the next one.

In the following exercises three, four, or five perforations can thus be grouped together, so that they appear in lines of the vertical direction, and also representing the horizontal one, as well as the various slanting lines. It would lead too far to enter into a minute description, and we must direct those who wish to gain more knowledge of this to our *Kindergarten Guide.* Suffice it to say, that merely grouping by perforations, not only lines, squares, and oblongs of various sizes can be made and joined into symmetrical forms, but these very lines, squares, and oblongs give also a starting-point for first lessons in arithmetic.

For instance: Making two, three, or more, perforations in a line, the child says: "Two ones are two"; or, "Three ones are three;" or, "Four ones are four," etc.

When making four perforations, two above and two below, not only a square is represented, but it is a demonstration of the fact that four 1's = 4; or, two 2's = 4.

When making an oblong of six perforations, the child demonstrates that: two 3's = 6; or, three 3's = 6; or, six 1's = 6.

When making a square of nine perforations, three in a line, it learns the fact, if not known before, that: three 3's = 9, etc. Primitive as such exercises are, they will interest the child, and hence do the good they are intended for.

The entire course of perforating, of which the aforesaid is only the *very first beginning*, should be extended over a term of *years;* for much of it is well adapted for the school-age, where it might be carried out with profit, and even for the adult; for with skill very artistic work may be produced.

ZOOLOGY FOR THE LITTLE ONES.

BY CLARABELLE GILMAN.

XII.

THE OYSTER.[*]

Our large Providence River oysters have been killed in warm water, and the shells sponged to take off the dirt, without removing the brown skin often found on them.

First we wish to describe the shell, and we find out by degrees that it is broad at one end and pointed at the other; that one side is flat or concave, and the other somewhat convex; that it is rounded inward or almost straight on one long edge, and rounded outward on the other.

Clam-shells have been placed on the desks, and the scholars now begin to compare the two bivalves, and their interest continually increases as they discover new points of resemblance or difference.

"What is it, Fred?"

"The oyster-shell isn't smooth, like the clam-shell."

"What word shall we use to describe it, then, that means not smooth?"

Little Abbott tells us, "It's rough."

Gertrude finds that the shell is composed of two parts; and Daisy remembers that those parts are called valves.

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[*] This lesson should be taught before that on the Snail, given in Sept. No., thus following the study of the Clam. Points which were explained in the lesson on the Clam are merely referred to here, though it is hoped that no teacher will lose the opportunity for a thorough review of all important points of structure.

"What else do you notice about the valves, Bessie?"

"One valve is larger than the other."

"Which one is the larger?"

"The convex one."

"What have you found, Ernest?"

"This pointed end is the beak. There's a piece of rock fastened to this shell, too."

"On which valve is it?"

"On the large valve."

"Do you think the rock grew on the shell, Bertie?"

"No, indeed; the shell must have grown to the rock, and a piece of the rock split off when they got the oyster."

"Did we find any such pieces of rock on the clam-shells?"

"No; for the clam isn't fastened to the rocks."

"Baby-oysters can swim about in the water, but as they grow older they find some nice rock, or perhaps some large oyster-shell, and fix themselves for life. In this cluster you see two large oysters that have grown to each other, with a small one clinging to one of them. When they are young, both valves of the shell are of the same size and shape; but after they fix themselves, one valve grows larger than the other. Perhaps we may find a reason for this.

"What else do you see, Ella?"

"The lines of growth are not like the clams: they are rougher."

"What is it, Gertrude?"

"There's a piece of something red on this shell, and on Ella's there's a coating that looks as if it had pin-holes in it."

"The red substance is a kind of sponge, and the other coating is made of the skeletons of a whole colony of little animals. Now try to open your shells."

They break the ligament, and now their discoveries follow closely upon each other.

"There's only one place that had to be cut to open the shell, so I think there's only one muscle."

"The muscle is near the middle of the shell, and it's a big one." "There's a hinge at the beak, with a ligament that you have to break if you want to open the shell." "What makes this hollow that goes from the beak to the ligament?"

"Is there anything in that hollow?"

"Yes; there's something that looks like dried ligament."

"Has the ligament always been in the place where you see it now?"

"It couldn't have been here when the oyster was a baby."

"Must it have beeu nearer the beak, or farther away from it?"

"It must have been nearer the beak, and this hollow shows how it has grown down while the shell was growing."

Alice continues: "The muscle has made a dark mark on the inside of the shell."

"See if you can find a dark scar anywhere except directly over the muscle."

"Yes; I can follow it almost up to the beak, and it keeps growing smaller."

"Can you think of any reason why the scar of the muscle cannot always have been in the same place where it is now?"

"When the oyster was little, the muscle was near the beak."

"Yes; and as the oyster has grown, the muscle has grown, too, and has traveled downward on the shell."

The track of the muscle can be seen very well on some of the flat valves, where the overlying deposits of lime are thin. It can be seen also by filing the back or the edge of the shell, and then striking it sharply with a hammer, when the shell will split or the inner layers will flake off, thus exposing the long scar underneath.

"Are there any other marks on the shell?"

"I can see the pallial line."

A few questions at this point will show whether they have found the pallial line, and really know what is meant by it.

"Now we will examine the soft parts of the oyster."

"The mantle isn't close to the shell, like the clam's, but hangs down inside." "I don't see any mantle." "Why, the oyster's mantle covers him just as the clam's did, but it isn't like a bag, and has lovely ruffled edges."

It must be explained here that the mantle reaches out around the edge of the shell when the oyster is alive. The children are then questioned with regard to the work of the mantle, which it is important that they should have a clear idea of. After this they are ready with further remarks and queries.

"He has four gills, like the clam." "They are prettier than the clams, they are such lovely ruffles." "I can't find any foot." "I don't see what he wants a foot for, if he has to stick to a rock all the time." "I've found the mouth, and the four little flaps around it." "What is this little bag beside the muscle?"

"On which side of the muscle is it?"

"It's toward the beak." "That little bag is the heart."

The investigations continue:

"The oyster hasn't any siphon."

"Why does the clam need a siphon?"

"To take in water."

"Can the oyster take in water without a siphon?"

"Oh, yes; for his mantle is open all around."

"If the clam's mantle were open all around, would he still need the siphon?"

"Yes; because he buries himself in the mud, and he couldn't reach up to the water without it."

"Does the oyster bury himself as the clam does?"

"Oh. I see! He doesn't need a siphon because he's in the water, and has nothing to do but open his shell and let the water come in."

But Ernest has an objection to this:

"The siphon has two tubes, one for the water to go in, and the other for it to come out; and if the oyster hasn't any siphon, I should think the water would get mixed."

"You may find the places for the mouth and the siphon of the clam, from your clam-shells. Then hold the oyster in the same position, with the mouth away from you, and see if you can tell where the oyster's siphon ought to be if he had one."

"I know where it is; and the mantle is fastened together here, so that the water has to go in on one side of this place, and come out on the other side of it."

This little "bar," as it is called, lies near the large end of the oyster, close to the angle formed by the junction of the straight edge with the rounded edge of the shell. Water passes in on one side of the "bar," sweeps around through the gills, and then out on the other side of the "bar," between the straight edges of the shell. The "bar" thus separates the two currents of water in the same manner as the partition-wall between the tubes of a siphon.

The experiment of feeding with indigo, in order to see the little threads formed on the gills, and the direction they take, may perhaps be more successfully tried with the oyster than with the clam.

After so much comparison of the oyster with the clam, it is easy for scholars to determine the right and left side of the former, on the right and left of the mouth, when the animal is held in a position corresponding to that of the clam; and to see that the oyster is attached by its left valve.

Finally, a little search shows us that the oyster lacks the crystalline stylet, with which the children were so much pleased in the clam.

We have found that the oyster resembles the clam in its general plan of structure, but with such modifications as might be expected from its fixed position. The foot, no longer needed, does not appear; the siphon is wanting because the oyster does not burrow, but lies where the water has free access to its gills; and the symmetry of its valves is lost because the work is unequally divided. the upper valve having to accommodate itself to the opening and closing of the shell, while on the lower one, which is completely supported, the mantle has only to lay down lime.

EDITORIAL.

The great work imposed upon primary teachers requires that they should not only be specially fitted for it by careful previous professional training, but that they should perform it in a way to arouse and stimulate the dormant and developing faculties of the young children in a healthy and reasonable manner. Well-matured and definite plans should be made at the opening of each school term as to the kind and amount of teaching the class should receive. It is steady, continuous, and faithful graded work that secures the greatest permanent success. Many teachers work upon the *impulse* plan, — make spasmodic efforts to reform certain weak points in their school. In fact, we have known teachers who seemed to act upon this principle from day to day in their work, not only in teaching, but in the management and discipline of their schools. Nothing is more undesirable in educational work. *Intelligent persistency* is the prime qualification of a good primary teacher. Spasms of reform in teaching and governing yield little in return for the extra effort made. The almost certain relapse into the previous state of indifference is generally followed by a deadening of the sensibilities of the children, which will make it difficult to arouse them to any new efforts to secure genuine reforms. The true policy is to make haste slowly, but surely; assume positions after due deliberation, and maintain them until they need modification, and then let the needed changes be made with great care, and gradually. In the matter of discipline, the *impulse* plan is not only dangerous, but fatal to success in securing good order. Mary Allen West, of Illinois, has written truly of the influence of spasmodic attempts which develop themselves in the hasty fault-finding of teachers. She says:

> "There is no influence emanating from a teacher during recitation which so completely paralyzes the mind of the pupil as the practice of scolding or ceaseless fault-finding. The temptations to petulance and snappishness on the part of teachers are manifold, and at times almost irresistible. Lack of faithful preparation, of quickness of perception, of moderate reasoning power, of interest, of enthusiasm, of uninterrupted attention, of just appreciation of the object and advantage of recitations, are causes of irritation to be found in almost all classes. Those who possess but little love of the work of education; who regard neither the present happiness of children, nor the future welfare of individuals and States; who, in short, work in the educational vineyard exclusively for dollars and cents, or because more congenial fields of labor are not immediately accessible to them, are peculiarly liable to infuse this kind of narcotic influence into all the intellectual exercises of the school."

Among the most careful observers of our educational work of to-day, there is a growing conviction that there is danger of attempting too much, of introducing too many branches of study into the elementary schools, especially in the strictly primary departments. The same criticism has recently been made by the president of the Swiss Republic,—M. Numa Droz,—who was formerly superintendent of public instruction of the Canton of Neuchâtel, and began life as a primary teacher. In regard to the schools of his country, he asserts that in the schools of Switzerland many pupils suffer from the evil of "cramming too many things, instead of developing the powers of thought." The well-known Swiss historian, Dr. Daguet, complains that *general history* is taught in the elementary schools, and claims that the superiority of the French primary schools is apparent, in which only the *national history* is taught. The following are his reasons for not teaching general history as a separate study: (1) There is not time enough for preparation on the part of the teacher, nor is the school-day long enough for the proper time required to teach general history. (2) The pupils have enough to do, if they study national history thoroughly. (3) The double work of studying both requires better judgment and more mature minds than the pupils have. The teacher of history cannot thus obtain the triple result, consisting of a "knowledge of events, exercise of the judgment, and the education of the heart." The sound policy seems to us to be to teach in the lower grades of our public schools, thoroughly, the fundamental branches, which will prepare the pupils for future advancement upon a solid basis, and at the same time prepare them for practical life. The Swiss at one time had too few studies in their schools; now they have too many, and the universal complaint of the teachers is, that they are required to prepare pupils in too many branches. The spirit of our time seems to demand *multa et multum*, and the danger is that it will receive *multa et parvum.* Why not hold fast to the true view, and secure *multum, non multa*, which will insure the greatest permanent good?

CORRESPONDENCE.

HOW I FIXED UPON A PLAN FOR TEACHING NOTE-SINGING IN MY SCHOOL.

Editor of Primary Teacher:—Last month I told you about my early efforts to teach singing by ear; for I saw that the pupils must first be able to sing *somehow* before they could learn to sing by note. Much care was needed at every lesson, moreover, to get a pleasant quality of voice.

Besides our simple songs, I taught them the scale through one octave up and down, also by ear. To assist in fixing the order of sounds in their minds, we sometimes sung by numerals, though more generally with the common syllables, *do, re, mi*, etc. When the succession of sounds had been thus learned, we sung them to a single syllable, *la*, or to some one word, so that the real thing came before their minds independent of mere names. But I could not dismiss the names wholly at that stage, because I should then have no way to speak of the individual steps in the scale.

I was so prosperous in this part of my work that I wrote little exercises and songs in syllables or figures on the board, and the children sung them without much help, by means of the sense of relation between sounds which these names gave them. Now, though this kind of instruction might be all that should reasonably be expected in a very young class, or might serve as a good basis for subsequent instruction in any class of beginners, it did not answer the requirement in my case. I was to teach them to "sing by note," the committeeman said, and I had not yet done it. I knew, also, that an adequate course of instruction should have for its aim to teach the pupils to interpret a page of music, printed in the common notation, with as much intelligence as they do a page in their reading-books. My duty was clear, — to find some common-sense way of connecting what they already knew, with music in its written forms. To learn all the names of the musical characters would avail but little, though incidentally necessary; the real thing to be accomplished was, to learn to recognize the musical thought expressed by these characters.

I understood perfectly that when a piece of music is written in notes on a staff, it is written virtually in letters; and all musical directors, when referring to matters of pitch, do it invariably by letter. To be a competent reader of music, one must be able to handle letters.

The necessity for employing letters had been dawning upon me during our work with syllables. For though the rise and fall of the voice in due order is the great essential to a tune, yet it made all the difference in the world with the effect of the song in what region of voice it was started. If too high, or too low, it sounded insignificant, or else unpleasant and fatiguing. Sometimes a song was so commenced that we could not sing it through at all, and we were forced to start again in a more judicious way. I came to the conclusion that some reliable plan must be devised for placing the tune in the proper region of voice; and I saw that only by an appeal to letters as used in instrumental music could we be able to pitch every tune so as to get the best vocal effect. Letters, therefore, I must teach.

But if one can manage his vocal organs so as to produce a tune in no other way than through a sense of the relationship in the pitch of sounds (and that I had found to be the fact), it must be that the letters used to express a musical thought suggest that relationship to the intelligent sight-singer; and then he is able to govern his vocal movements accordingly.

But what difficulties here appeared! Take the snarl of chromatically-altered letters in a piece of classical music,—how can a learner ever come to see their relationships? I reflected, however, that I should be called upon to teach classical music at about the same time with Greek and Hebrew in my school; and that I need not worry about it now, only so far as to make beginnings which look in that direction; just as I was setting my little class in number with their faces toward the higher mathematics, — up hill, and a long way off.

I reflected, too, that the composers, when selecting the letters to express their thought, do not shake them up in a hat and draw them out promiscuously; but they are always used in *sets of seven*, or *keys*, as the musicians say. True, there are a good many of these, but they can all be learned one by one; and though these different families of letters interchange frequently in high-class music, yet the properly educated eye detects at once where one set is superseded by another. Each set, or key, has its well-defined relationship, which, when rightly perceived, forms the guide in singing "by note." My desire was to find the place where this ladder of ascent, with its top in the skies, rests upon the ground.

The only musical imstrument I had at hand was a *C* tuning-fork. This I struck, asking the children to listen; explained that the sound of the fork could never change, and that a sound just at that pitch was named *C*. That letter I wrote high up, near the top of the board. Assuming it as the top of a scale, we descended through the octave, writing the other letters, *B*, *A*, *G*, *F*, *E*, *D*, *C*, in a vertical line below the upper *C*. The pupils then followed my pointer up and down over the whole or a part of this series, singing the usual syllables. Perceiving that some were lazily resting in the mere act of applying the right syllable, and did not try to form a conception of the sounds, we dropped the *do*, *re*, *mi*, and sang with the one syllable *la*. Now the real work began. The children could sing up and down through the whole scale without any trouble, just as they sang through any tune they had memorized, and with no different results. But when I came to make variations in the order of the sounds, it was necessary to conduct the lesson very skillfully, or they lost the connection. I found great help in emphasizing the *first*, *third*, *fifth*, and *eighth* (*C*, *E*, *G*, *C*,) their relations being more apparent; and after getting these well, they served as landmarks for the other sounds. We spent a good many lessons in working this up; taking the pitch from the fork at the beginning of every lesson, also during the lesson, whenever the little singers seemed to have fallen away from it. We generally sang a few minutes with the syllables each day, so as to refresh the memory with the scale-order, by the association of syllable and sound. But I did not continue the use of syllables to a weakening extent.

After a while I wrote the scale in notes upon the staff in the key of *C*, and commenced practicing upon it instead of the written letters. This change was readily made, as I did not stop to complicate the business by naming and explaining all the characters at that time; though I taught the class to read letters from the staff.

I found one method of study to be particularly useful. As I sang, with *la*, one of the sounds of the scale, I required the pupils to listen and name its letter. This power of discrimination on their part enabled them to form a more accurate mental picture, and they advanced correspondingly in their sight-singing. I next proceeded to write little song-exercises on the staff, using tones of uniform length, as I had given them no lessons in time. I reviewed all the ground pretty often, and besides, sung a few songs by ear for recreation.

TEACHER.

TRUTHS.—The truth is that no person pursuing in-door occupations can expect to escape the consequences. Those great organs, the liver and kidneys, will become inactive, and they need just such a remedy as Kidney-Wort to keep them in a healthy condition.—*Household.*

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Lesson on Kindness to Animals.

"THE CATTLE."

[To be read to pupils by Primary Teachers.]

In the first chapter of Genesis we are told that "God made the cattle"; and in the eighth chapter of Genesis, that "God remembered the cattle." In the one hundred and fourth Psalm, that "He causeth the grass to grow for the cattle"; and in the fiftieth Psalm, that "the cattle on a thousand hills are His."

If God *made* the cattle, and *remembers* the cattle, and *causeth grass to grow* for the cattle, and *the cattle on a thousand hills are His*, will he not remember those who cruelly treat the cattle,—those who carry them several days on the railroads with no food or water, — those who kill them very cruelly in the slaughter-houses, — those who take the little calves from their mothers when very young and treat them cruelly, — those who, to save the cost of hay, give their cattle so little food in winter that they are half starved, and become lean and sick?

Sometimes cattle suffer more than a thousand deaths because their cruel keepers do not give them enough food in winter; and many times they suffer in winter because their keepers do not provide comfortable barns.

Cruelty to cattle and other animals in keeping them, or in killing them, injures their meats, making them unwholesome, and sometimes poisonous. So, also, cruelty to cows often makes their milk, and the butter and cheese that is made from the milk, unwholesome and poisonous.

I should not like to eat the meats of animals that had suffered on the cars, just before they were killed, or that had been killed in a cruel manner, knowing beforehand, that they were to be killed. They should all be killed instantly, either by shooting them in the head, or otherwise, and no animal should ever be compelled to see another animal killed.

WHAT AGASSIZ TAUGHT.

The great teacher, Agassiz, used to teach his pupils to quickly kill even the fish they caught as soon as they were taken out of the water, by striking them on the back of the head with a stick or stone, because fish that die as soon as they are caught are much better than those that die slowly and suffer before they die.

No creature, either bird, or beast, or fish, should ever be permitted to suffer long before dying, because it is cruel to the creature and injures the meat. The Massachusetts Society for preventing cruelty to animals publishes a little book showing how all domestic creatures can be killed in a merciful way.

I would not like to drink the milk of a cow that had been frightened, or in any way abused, for I should know it would not be wholesome. I should not like to drink the milk of a cow that is kept *alone* in a stable, or that does not have fresh air, exercise, and sunshine; for a creature that is kept alone is likely to be very lonely and unhappy, and a creature that does not have air, exercise, and sunshine is likely to be unhealthy, and give poor and dangerous milk. If we want good milk we must treat the cows kindly. One of the greatest dairymen of America says that "*he always speaks as kindly to his cows as he would to a lady.*" We cannot treat unkindly any of God's creatures that supply us with food without danger of suffering ourselves.

---

* Written and compiled by GEO. T. ANGELL, Esq., President of the Massachusetts Society or the Prevention of Cruelty to Animals.

If you think that cattle have no intelligence, you are mistaken. They understand what their drivers say to them. They understand how to defend themselves when droves of them are attacked by wild animals,—always putting the younger and weaker ones in the middle, while the stronger meet the enemy with their horns. In southern Africa, oxen have been taught to fight in battles for the tribe to which they belong. (See "Ox" in *Chambers' Encyclopædia.*) Cows have great affection for their young. The gentlest cow will fight for her calf. At North Conway, near the White Mountains, a few years ago, a cow fought and wounded and drove off a large bear that tried to get her calf.

STORY OF A BOY.

I have recently read an account of a boy about fourteen years old who, while watching the cows, was attacked by a wolf. One of the cows came to his rescue, attacked the wolf, and saved the boy's life. I know that cows have gratitude, for some years ago I was crossing a field in Dorchester, near Boston, Mass., and found a cow which had been tied to a tree. with a long rope. In feeding she had gotten the rope wound about her legs and been thrown to the ground, and in struggling to get away had gotten the rope still more wound about her, until she lay entirely helpless. When, after a long time, I succeeded in unwinding the rope and getting her on her feet, she came to me, with a kind look in her eyes, and lapped my coat-sleeve with her tongue. When I went home I told the folks that I had met a lady in great distress, and had relieved her, and that she had rewarded me with a kiss.

Cows have often been trained to know their names, and come when called. The great American statesman and ortor, Daniel Webster, asked, just before he died, that all his cattle, which he loved so much, should be driven to his window, that he might see them for the last time; and as they came, one by one, to his window, he called each by name.

Let us always remember how the oxen toil for us; how the cows supply us with milk, and butter, and cheese; how much all these dumb creatures do for us, and how little they get in return, and let us try to do what we can to make them happy.

SOME QUESTIONS.

[Others to be added by teacher.]

What are we told in Genesis about cattle?

What are we told in Psalms about cattle?

In what ways are cattle cruelly treated?

What effect has cruelty to cattle, and other animals, upon their meat?

What effect has cruelty to cows on their milk?

What is said about animals being killed instantly without pain?

What did Agassiz teach his pupils about fish?

What is said about cows being kept in stables alone?

What is said about cows kept without fresh air, exercise, and sunshine?

If we want good milk, how must we treat cows?

What did one of the greatest American dairymen say about his cows?

What is said about the intelligence of cattle?

How do they defend themselves against wild animals?

What have oxen been trained to do in Southern Africa?

What can you tell about the cow at North Conway, near the White Mountains?

What can you tell about the boy who was attacked by a wolf?

What can you tell about the cow at Dorchester, near Boston?

What did Daniel Webster do just before he died?

What should we remember and try to do?

MY JEWELS.

BY ALICE M. MAY.

A score of smiling faces, with dimpled cheeks
So fair;
Three little golden heads, two wavy brown, the rest
Of darker hair,—
These in our school home, and you have *my jewels,*
My little learners there.

I watch the shining "copper-toes" as they carefully
Form in line;
I watch the radiant, roguish eyes look wonderingly
In mine.
And I question if in future years their *lives* as bright
Will shine.

I welcome the brown hands and rosy lips that come each morn
To meet my own;
And the bird-like voices as they sing a sweet "Good-night."
Ere "Home, sweet home."
And I know when the echo dies away that my songsters
All have flown.

Then I pray the dear Father up in heaven
My *precious jewels* keep;
And help me o'er the rugged heights to guide
Their tender feet,—
And each day leave upon their youthful hearts,
Some impress sweet.

And when life's tasks are ended, and its lessons
All complete,
May I meet my little learners gathered
At the Master's feet,
To sing the new song of redeeming love,
With angel voices sweet.

MIND-WEAVERS.

Oh, weaver, throw your shuttle
With holy zeal,
Compassionating love, a heart
Within to feel,
That when the warp which Gabriel spun,
As first the gleam of life begun,
Becometh white, the final mart
Pronounce your work its counterpart.

— *Mrs. Sarah M. Wyman.*

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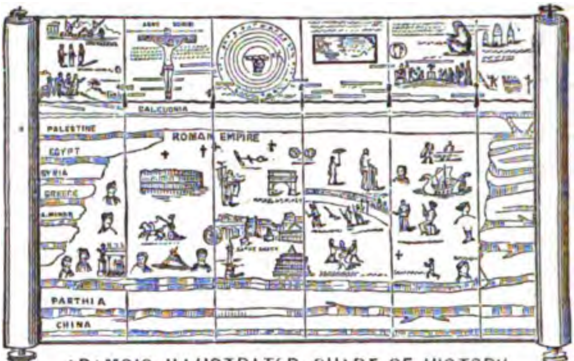

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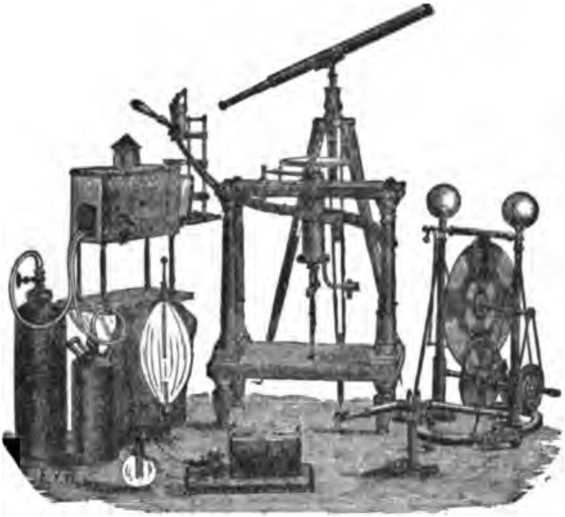

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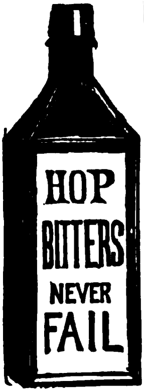

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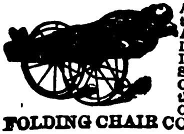

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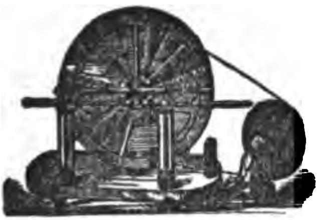

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THE

PRIMARY TEACHER.

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TRUE STORIES, AND HOW TO TELL THEM.

BY MRS. SARAH M. WYMAN.

III.

THE NORTHMEN.

Teacher.—(Tracing on the board the outlines of the countries.) You see, children, it does not seem very far from Norway to Iceland, nor from Iceland to Greenland; and from Greenland, men might naturally sail round Newfoundland and thence down the coast of New England. I'm going to tell you about a people that are supposed to have come in this way to our country many hundred years ago, before any known white man ever saw it, and when it was a vast wilderness. (Pointing to Norway.) Of what peninsula does this country form a part?

Scholars.—The Scandinavian peninsula.

Teacher.—The people of Scandinavia, years ago, were called Northmen. An ancient writer tells us they were men of fair complexion, yellow hair, and very tall in stature. The Northmen were great sailors, and it is well known that their descendants, the Swedes and Norwegians, are found at the present day, in almost every vessel manned with a large crew. Knowing this, we can more readily believe the story told of a certain Northman, named Eirik, who wandered away from Norway to Iceland, and thence to Greenland, where he made a permanent settlement in the year A. D. 985. Lief, eldest son of Eirik, loved the sea, and so he procured a ship, and the Northmen being fond of adventure, several of them agreed to go with him. Among these was a German whose name was Tyrher. He had come from a southern land, and had told them of the luscious grape it produced and the golden wine. Lief stood on the deck and steered his ship southward He waved his hand to his father, and his men turned their blue eyes upon Greenland's shores and sang a farewell song, which ended with a shout of "Courage! courage! hurrah!" So they steered south, and when they came to what they supposed was land, they lowered their boats and went ashore, but found a plain of flat stones lying between them and ice-hills. This was not very inviting, and Lief said, "Now I will call this land Hilluland, which means, in their language, "a flat stone." Can you think of any place along this coast (pointing it out on the board) that they might have reached?

Martin.—Newfoundland.

Teacher.—Yes; it is supposed the place was Newfoundland. But they soon left it, and sailed several days with a northeast wind, until they came to an inlet which led into what seemed a lake, and there they anchored. When Lief looked around at the fine woods and green pastures along the shore, he exclaimed, "This is a good land." He called together his men and said, "Let us pass the winter here, for the rivers are full of salmon and the country is full of promise." Where do you think they were, children?

After some speculation as to the locality, it was generally agreed that they had anchored in Narraganset Bay.

Teacher.—Lief was great and strong. He was called Lief-the-Lucky, because he succeeded in what he undertook, as great men usually do. Why do they succeed?

Monroe.—Because they persevere.

Teacher.—Yes; they also plan well, to begin with. Lief divided his men into two parties, to explore the country. One day Tyrher, the German, was missing. Lief was much distressed, and went out himself to find him. Tyrher soon appeared, and he talked German and rolled his eyes around, and seemed out of his senses. At length he said, "I have not been far, but I have found something to tell of. I have found vines and grapes." "Is that true?" said Lief. "Surely it is true, for I came from the land of vines and grapes." The next day they found it was so, and gathered their boat full of wild grapes. They built booths, or houses, and cut timber for loading the ship, and so they passed the winter. There was but little frost; the grass did not altogether wither. To the surprise of Lief, the sun, on the shortest day, was in the sky from half-past seven o'clock in the morning until half-past four in the afternoon. Why do you think Lief was surprised at this?

John.—Because the days are so much shorter in Greenland and Iceland, where he came from.

Teacher. In the spring Lief sailed away to Greenland. Before he started he said, "Now, O land, will I give you a name worthy of you. You shall be called Vinland. When he reached Greenland, his friends and neighbors crowded down to see the great timber trees which he had brought, and to hear of the new Vinland he had found, and in the long winter nights the sailors told the story of the voyage, and the fame of these things spread over the country. Now, children, the Northmen never wrote any history of this little settlement they once made in New England. How do you think we know anything about it?

Childlike suppositions are brought up. One little fellow, taking his clew from previous lessons, asks, "Didn't they dig up some Northmen's bones?" Another, who had read the "Skeleton in Armor," and the explanation found with the poem, said, "Was not that a Northman's skeleton?"

Teacher.—Some have supposed so. But it has been ascertained that the Northmen did not use brass armor. So the skeleton was probably not that of one of those early adventurers. It is thought the story of Lief, the Lucky, was caught up by those Northmen who went about telling stories to entertain the people. They were called *Scalds*, and sometimes went even as far as England or France. Those who heard the story about beautiful Vinland related it to their children, and so it was handed down from one people to another; and now men have begun to write about it.

James.—Did nobody but Lief and his crew come to Vinland?

Teacher.—Yes, others came, but they did not remain long; and finally all left, and no one came back; and nothing more is known about this country for five hundred years. Then Columbus came. I shall tell you about him in the next lesson.

WRITING-LESSONS FOR LITTLE FOLKS

BY LYMAN D. SMITH.

VI.

THE WRITING MOVEMENT.

The free use of hand and arm is essential to fluent writing. The child has many difficulties to overcome, at first, in acquiring the correct writing movement. He will be inclined to rest his arm and hand heavily on the desk, and get no lateral motion except from the wrist. The wrist-joint should be entirely ignored in writing. It has its uses in many manual performances,—such as piano, or violin playing,—but the bending of the wrist-joint in writing should be carefully avoided, and this is the chief object in giving free-movement exercises. The thing to be secured is free and unobstructed motion of the hand, wrist, and fore-arm (all one unit), from left to right, without any hitching or stops. The undrilled pupil, to keep his hand in the same relative position for each letter, will stop and raise his arm to get a new start; while if well-drilled on the lateral motion, his fore-arm involuntarily moves along, while the fingers are at work, extending and contracting to form the letters.

DRILL EXERCISES.

The little folks should have a daily drill in movement. I have often had a class move dry pens reversed across their books, and go through other motions, before practising the regular lesson. Let there be movements of different kinds,—sideways, upwards and downwards, raising the fore-arm nearly or quite to a vertical position, keeping the elbow stationary; then, dropping third and fourth fingers against inside of hand, let them practise finger movement, bending and straightening the pen-fingers while holding the pen in the proper position (this gives the teacher a good opportunity to see all the hands); do not keep up this practice so long as to tire the pupils,—half a minute at a time is sufficient; at a signal, let all fore arms fall gently to the first position, seeing how many pupils let the ends of third and fourth fingers touch the book at same time the pen-point does; at another signal, let the pupils all raise fore-arms to vertical position, and immediately down again, then up, then down, then the sideways or lateral movement. Devote five minutes or so to drill-exercises, where lessons are of thirty minutes' duration. All this helps *to train and get control* of the arm, hand, and fingers.

If time admits, have slips of paper prepared,—four or five inches wide, by seven or eight long,—and drill with pen or pencil, making letters in groups an inch or two inches apart across the paper, far enough apart to insure movement from the elbow-joint, the *pivot* from which all should be taught to swing their arms. Have the pupils make the letters gradually closer together, still maintaining the *swing* from the elbow as the centre of motion,—the movement is the same in kind, only less in degree. In this way, have the lines contracted until the letters are half an inch apart; then less than this, until the letters are gradually brought as close together as found in their copy-books. The pupils are thus led almost imperceptibly into the true writing movement.

FIRST STEP IN NUMBERS.

BY W. W. SWETT.

III.

XII. Write on the board the following square:

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

Let it be copied and examined. Ask for it occasionally on slate and board, but make no further suggestion about it than that it be frequently copied and thought about. It will be of future use.

XIII. "If we pay 10 cents for a melon, and 10 cents for another melon, we shall have paid 2 times 10 cents; now if we pay 10 cents for another melon, we shall have paid ——?"

Some one will be ready with the response, "3 times 10 cents." Continue to 10 times 10 cents, securing each time the same form of answer.

After going through addition, subtraction, and multiplication, children are usually taught a similar form of words, and often repeat it as a mere form. Even in written, as distinguished from mental examples, children frequently multiply because the examples come under the head of multiplication, without understanding or thinking that 79 tons should cost 79 times as much as 1 ton. The simple process above described can be more successfully used with beginners than with those who have grown listless and inattentive for the want of proper training at the start.

"How many cents are 2 times 10 cents?" If any one fails to perceive that 20 cents is the result, it is better to show two dimes than 2 rows of 10 cents each. The process should be that of adding, not counting. Let the whole set of questions be similarly answered, and then reviewed by the aid of promiscuous questions from the teacher.

XIV. Try as above the fives as far as 5 times 5. When that point is reached and the work thoroughly done, impress upon the mind that five nickels equal in value a quarter of a dollar. Then ask, "What do ten nickels equal in value?"

The child will possibly see that ten nickels are twice five nickels, and a half-dollar twice a quarter of a dollar. He may even make some such statement, but no labored explanation is necessary. If the answer desired is not obtained, it need not be stated until a later lesson.

XV. It is well often to sum up the little store of knowledge acquired. After doing this at this point, ask, "How many are 2 times 7?" It is known that 7 and 7 are 14. No prompting will be necessary to cause them to recognize the question in its changed form, and the answer will be followed by other questions of their own making.

Give for slate-work an example in multiplying by 2, stating that the work is nothing more than that of adding, as in VIII.

XVI. In the first question in XIII., substitute oranges at 2 cents each for melons at 10 cents each, and follow the directions there laid down. At last, 10 oranges at 2 cents each are found to cost the same as 2 melons at 10 cents each. The child sees that 2 times 10 and 10 times 2 are alike. Lead him, by further illustrations (rows of buttons, or of crosses, or stars), to see that 2 times 5, or 7, or any other number, may be similarly reversed.

If the game with tickets is found profitable, tickets for the new results may be prepared. Should the answer 9 and 9 be given for 2 times 9, it is well to acknowledge its correctness, while passing to the next pupil, "Right, but not on this card."

XVII. Call up the square formerly prepared (XII.) If no one has observed it, or can put the fact into words, the teacher may state that the first and third columns consist of odd numbers, and the second and fourth of even ones.

While some one repeats the odd numbers, from 1 to 15, point alternately to one column and the other.

Write the same odd numbers in a continuous row, and cross out each alternate one:

1 3 5 7 9 11 13 15

Let the class perceive that the numbers crossed are those in the first column, and the others those in the third column. Observe that in reading down the first column, you skip every other odd number. Let each pupil try how far he can repeat the odd numbers thus, skipping one each time, and mark as in IV. Pursue the same course with the even numbers. Continue the exercise until it becomes familiar.

Call attention again to the fact that adding 2 to any odd number gives for an answer the next odd number; and then point out that adding 4 to any odd number gives for an answer the next but one odd number; that adding 4 to any even number, gives for an answer the next but one even number; that in this square, going down a column, you add 4 to each preceding number; that adding 4 is adding 2 twice.

Let the square be made again and again, until the order of the numbers in the various columns becomes familiar.

A LITTLE ABOUT MINERALS.

BY H. L. CLAPP.

Pupil.—Will you please tell me the name of this stone?

Teacher.—Yes; but first describe it as well as you can, and tell me where you found it.

P.—It is a light-colored, speckled stone, and some of the speckles are black, some white, and others are gray and look like glass. I found this one in the road, coming to school, but there are lots like it in the wall around my father's pasture, and they are in all the stone-heaps about the farm.

T.—Yes; and nearly every boy in New England and many other places can say the same as you have said in regard to their being everywhere. Being so common, then, we have no need of going far to find something interesting to talk about. How is it that some of you have not brought me stones to name for you before? Well, James?

James.—Most all stones are homely, and I'd rather read in our reading-books about Jack the Giant-killer, and Bluebeard. Fairy stories are nice, too.

T.—No doubt; but when you know more about stones you will think them more beautiful and interesting. I have seen a great many boys more interested and excited collecting stones than they could be in following Jack in imagination when he went around cutting off giants' heads. What is it, Frank?

Frank.—Isn't Jack and the Bean-stalk a good story?

T.—Very fine, for one that is not true. What I mean to say is, it is not the best plan to spend more time in getting acquainted with Jacks and other unreal things than in getting acquainted with the pretty birds and butterflies, flowers and stones, between the school-house and your homes. Too many older folks spend too much time on unreal things rather than real, on things a long way off rather than things at home. Well, John, what do you wish?

John.—Will you please tell me the name of the stone? I think you did not tell me.

T.—Certainly. I am pleased to notice that you are even a little impatient to have the name. Now I am ready to give it, and you are in better condition to remember it. This is *granite.* The little black specks are *mica,* and they come off in very thin scales. You can pick them off easily with your thumb-nail. The white, or in this piece slightly yellowish, mineral is *feldspar.* Sometimes the feldspar is quite red in the most beautiful specimens of granite. The gray, glassy specks are *quartz*, which is so clear sometimes that eye-glasses are made of it I will now write on the board the names I have given you. Here they are:

Granite: { *Quartz.* / *Feldspar.* / *Mica.* }

What is your question, Charles?

Charles.—I saw a large rock back of our house that looked like that stone you have, only the mica wasn't black, but looked like silver, and was so clear that I could see right through it like glass, and it came off in scales bigger than a cent. And the white spots and glassy spots were very much larger. Was that granite, too?

T.—Yes; that was *coarse granite*, and only fit for walls around fields; but this piece, in which the different minerals are in small grains, is *fine granite*, and useful for many purposes. The mica in granite is quite as often silvery as black, and sometimes it is brown. Often the mica is absent or hard to find, and the feldspar has imbedded in it small forms of quartz looking like letters, especially a capital F; that kind of granite is called *graphic-granite*, or *letter-granite*, and, when polished, makes a beautiful specimen. Please try to remember what I write on the board, if nothing more. James, what have you to say?

James.—I have a piece of granite from Quincy, Mass., and there isn't any mica in it that I can see, but it is full of black specks which are very hard to pick with a knife. You said granite must have quartz, feldspar, and mica.

T.—True; but your granite is not the real granite, although it goes by the name of *Quincy granite*, but the proper name is *syenite*, because another mineral called *hornblende* takes the place of the mica found in true granite. The pure hornblende rock is exceedingly hard to break, and the hornblende makes the syenite a very durable stone. You can always tell mica from hornblende, because mica is rather soft and in thin scales, while hornblende is not scaly but tough and hard. Now I will write on the board other names for you to remember:

Graphic Granite, or *Letter Granite.*

Syenite: { *Quartz.* / *Feldspar.* / *Hornblende.* }

John, I have told you the name of your stone, and something besides; and now please tell me what granite is good for.

John.—It is good to keep sheep and cattle in pastures, for fence-posts, face-walls, walls of houses, and underpinning of houses,—and to knock off nuts and apples with.

T.—Very well. I will add, that some of the finest buildings in most large cities are made of granite. In Eastern cities, especially, Quincy granite is used for buildings, cap stones, curb-stones, and watering-troughs. Red Egyptian granite was used by the ancients for obelisks and columns. The Alexander column in St. Petersburgh consists of a single shaft of red granite over eighty feet high, and weighing nearly four hundred tons. Here I write the

Uses of Granite:
Stone-walls.
Cap-stones.
Stone-posts.
Buildings.
Face walls.
Curbstones
Underpinnings.
Monuments.

To morrow you may bring me the largest and clearest pieces of quartz, feldspar, and mica that you can find or borrow; and if you mistake any which you probably will, I shall be pleased to correct your mistakes. Then I will talk with you about *quartz.*

◆

A LESSON IN FORM.

BY "SHADOW."

II.

Teacher comes before the class prepared to develop the idea of, and teach, *corner*, *point*, *line (straight* and *curved).* Review lesson of yesterday, taking care that the children *understand* as well as *remember surface*, straight and *curved* faces, straight and *curved* edges. Then connect the new lesson with the old in such a way that the child will hardly realize where review ends and development begins. For purposes of illustration, the teacher should be supplied with a box of mathematical figures, and should also make use of such familiar objects as are at hand.

Teacher.—Observe this edge (along the side of box); this one (across the end), and this one (tracing thickness), and tell me what is true of them in regard to each other.

Child.—They come together.

T.—Tell me that in another way.

C.—The three edges meet. [Class decide; teacher confirms.]

T.—John, show me three other edges that meet.

[Child does so, other children finding several places where three edges meet.]

T.—What is formed by the meeting of three edges; or, what does the meeting of three edges form?

C.—The meeting of three edges forms a *corner.* [Class decide and teacher confirms, unless teacher has herself given the term *corner.*]

[Teacher then write the definition given on the board, and have class read it two or three times.]

T.—John, show me a corner and the three edges which meet to form it.

[John does so, other children finding other corners and tracing edges which meet to form them.]

T.—Look closely at this corner, then show me *exactly where* these three edges meet.

Children cannot find the place. [Class decide. Teacher confirms.]

T.—In connection with the size of objects, how many dimensions have you learned?

C.—We have learned three dimensions,—*length*, *breadth*, and *thickness*.

T.—Then what dimensions has this exact place where these three edges meet?

C.—It has no dimensions.

T.—It has, then, neither *length*, *breadth*, nor *thickness*. Now tell me what it has.

C.—It only has *place.*

T.– Give me another word meaning the same as "place."

C. or *T.*—Position.

T.—Since this place where the three edges meet has no dimensions, tell me whether you can see it.

C.—We cannot see it, because it has no size.

T.—What may we call this place where the edges meet?

C. or *T*—We may call it a *point.*

T.—Then out of a corner we get what?

C.—Out of a corner we get a *point.*

T.—What are the dimensions of a point?

C.—It has no dimensions; it only has *place* or position.

T.—What is a point?

C.—That which has position, but neither length, breadth, nor thickness, is a *point.*

[Teacher aids pupil in constructing this definition, as the expression "that which" is unnatural to a child. Then teacher write definition on the board, having class repeat.]

T.—John, you may represent a point on the board.

[John cannot,—perhaps says he never saw one.]

T.—Who can think of a way in which to represent a point? [Child shows a hand.]

T.—Mary, you may try. [Mary makes a dot on the board.]

T.—What has Mary done? •

C.—She has made a dot on the board to represent a *point.* [Class decide. Teacher confirms.]

T.—Since that dot represents a point, what may we call it of a point?

C.—It is a *picture* of a point. [If child cannot think of the word *picture*, teacher may show an object and then a picture of the object, after which the child will have no difficulty in getting the word.]

T.—How many think it is a point? [No one thinks so.]

T.—We cannot see a point, because it has no size (or dimensions). [Class decide. Teacher confirms, at same time explaining that for convenience we sometimes call it a *point.*]

T.—Now look at this edge (along the side) and show me the exact place where these two faces meet.

[Class cannot find the place. Children decide. Teacher confirms.]

T.—Then what dimensions has this place where these two faces meet?

C.—It has *length.* [If child does not perceive this, teacher may trace the whole length of the edge.] (Class decide. Teacher confirms.)

T.—And what dimensions does it not have?

C.—It has no *breadth* nor *thickness.* [Class decide. Teacher confirms.]

T.—How many can see the exact place where these faces meet?

C.—We cannot see the place, because it has no breadth nor thickness.

T.—What do we call that which has length, but no breadth nor thickness?

C. or *T.*—That which has *length*, but no breadth nor thickness, is called a *line.*

Teacher may have to aid the construction of the sentences, after which she will write the definition on the board, having children repeat.

T.—Mary made the picture of a point. Now who can make the picture of a line? John, you may try. [John does so, and class decide. Teacher confirms.]

T.—Why is that which John has drawn on the board not a line?

C.—Because that has *breadth* and *thickness* [child may not perceive this; if not, teacher leads him to see it, by making *heavier* and *broader* lines, and also by making faint lines on the board], and a line has only *length.* [Class decide. Teacher confirms; after which teacher explains that we call those pictures lines for convenience.]

T.—Out of what did we first get the idea of a line?

C.—We got the idea of a line out of an edge.

T.—How many classes of edges are there?

C.—There are two classes of edges, *straight* edges and *curved* edges.

T.—Then how many classes of lines do you think there are?

C.—There are two classes of lines,—*straight* lines and *curved* lines. [Class decide. Teacher confirms.]

T.—You have learned what a straight edge is; now what is a straight line? [Class decide. Teacher confirms, and writes on board.]

T.—And what is a *curved* line?

C.—A line whose direction continually changes is a curved line. [Teacher write on the board.]

T.—John, you may make pictures of lines of both classes on the board, and Mary may tell us which are straight and which curved lines.

Mary does so, saying, "This is a picture of a *straight* line; this is a picture of a *curved* line.

Teacher then drills upon corner, point and line, *straight* line and *curved* line, having children point out, make pictures of; and identify each, having class read definitions on the board, after which she erases definitions, removes objects, and has the children recall what they have learned.

PRACTICAL LESSONS IN NATURAL HISTORY.

BY MARY D. MCHENRY.

COLD-BLOODED ANIMALS—REPTILES.

In our last lesson we talked about animals that have warm blood, and discovered that they are divided into two classes, Beasts and Birds; we also learned to tell the points of difference; now we will study the characteristics of cold-blooded animals.

How many in the class have felt a cold animal?

As answers are given, proceed as in previous lessons, by jotting them on the board in two columns, one of Reptiles, one of Fishes; do not head the lists till full, and then after the children have discovered for themselves; they will not know the name of the first class, but can distinguish the reason of the grouping. They will see that all in the first line have feet, and can or do live on the earth, whereas those in the other list cannot live out of water, and have no feet.

If you live in the country, specimens can easily be obtained; by allowing each child to handle and notice for itself, a lasting and intelligent impression will be made, though you may have difficulty in inducing the little folks to touch the cold things.

If you can make a miniature aquarium, and stock it with a few fishes, a baby frog, or, better still, some tadpoles, the amount of practical knowledge and delight furnished will repay you ten-fold. If this is impossible, provided with colored pictures, clear ideas can be imparted. The children will discover that the Reptiles (except snakes) have four feet, like the beasts; that they are not covered with pretty feathers or soft hair or fur, but with tough, rough skin; that some live in the water and some on the land, while some can live in either place. You can tell them that some sleep part of the year, and that they do not hear, see, or feel as keenly as the warm-blooded creatures. They move slowly, and are hard to kill; some live to be very old; turtles have been known to live two hundred years.

At the close of the lesson the blackboard should contain, besides the two lists before-mentioned, the following exercises, to be copied on the slates or in the blank-books of those able to write:

REPTILES.

Do	*with*	*Have*	*Live.*
See	"	Eyes.	Earth.
Hear	"	Ears.	Water.
Smell	"	Nose.	
Eat	"	Mouth.	
Walk	"	4 Feet.	
Crawl	"	4 "	
Hop	"	4 "	

Breathe, some with gills, some with lungs.
Snakes crawl on their bodies.

NAMES.

Land.	*Water and Land.*
Tortoise.	Turtle.
Toad.	Frog.
Snakes.	Alligators.
Lizard.	Crocodile.

As this subject contains so many new ideas for the pupils to digest, it might be well to devote to it two lesson periods.

A short description of the changes in a frog's life will interest the children very much. Thus: when a frog is born, it lives in the water like a fish; it has a pair of pretty gills, all fringed, wtth which it breathes; it has a long tail, a fat head, and goes darting through the water like a streak; but after a while it has very strange feelings, and lo! it finds it has a pair of legs; very soon it has another pair; then it needs its tail no longer, and some day finds it is lost; its head changes its shape; the gills disappear, and instead the little fellow has a pair of lungs, and can breathe the air without first taking a drink of water, as it had to do before. Now it goes jumping in and out, swimming in the water or sunning itself on the land; it can live where it pleases. How very wonderful this is; and yet, the God who changes the tadpole into a frog made *us;* and by-and-by, if we trust in him, He has promised to change our bodies and make them like Christ's glorious body, free from all that hinders and troubles us now.

GEOGRAPHY.

BY MARY E. BADLAM.

III.

XII. *Hills and Mountains (concluded).*

Let the children tell how the air seemed as we went up the hill,—that it grew cooler and cooler; and then tell them if we were to go up a hill or a mountain very, very much higher, we should find it very cold,—so cold that the snow that fell there never melted, but stayed there all the year, looking very white and dazzling as the sun shone on it.

Tell them that mountains are not always found standing alone, but are sometimes found in long lines or rows, one after the other, just as they themselves stand when marching.

Let some of them stand in line, and let them mention things they find in rows,—as houses, trees, etc.

Show them a *chain*, and get the word from them. Then tell them these rows or lines of mountains we call *chains*.

Get the definition: A mountain-chain is a long line of mountains.

Show how mountains are represented on the globe, and let the children point to *single* mountains and mountain-*chains*.

Tell them we sometimes find a number of these chains lying together and nearly in parallel lines, and that these we call mountain *systems*.

Tell them some people think the inside of the earth is on fire.

Ask them what we have on our houses to carry off the smoke, and then tell them, of course we need chimneys to carry off the smoke from the earth, and sometimes we find mountains acting as chimneys and carrying off the smoke and fire. These mountains are called *volcanoes*.

Get the definition: A volcano is a mountain that throws out fire and smoke. (Here it would be a good plan to tell a few stories about volcanoes, earthquakes, etc.)

Talk with the children about the uses of mountains; about minerals, and springs and pools, thus paving the way for rivers later.

Let the children think of two mountain-chains lying near together, and of the land between them.

Talk about the water falling on the sides of the mountains, and running down into the land below.

Ask them what this water would do to the land below.

Give them the word "fertile," and tell them that land that is kept well watered is always fertile, and produces a great quantity of fine grass, fruits, and vegetables.

Tell them we call this land between the mountains a *valley*.

Talk with them about the best places for farms, and then tell them about the farms in New Hampshire and Vermont.

XIII. *Plains.*

Pretend to take a walk again on level ground with the children, where they can walk easily.

Tell them we often find large tracts of just such level land, without hills or mountains, and we call them *plains.*

Let them give definition: A plain is level land.

Get from them the names of other things that are level, to be sure they understand the term.

Question them about what we find on level ground, as grass, trees, etc.

Let them give the name "grassy plain" to a plain covered with grass.

Question them about the uses of such a plain, and tell them *we* call a grassy plain a "prairie," but in different countries they give different names for them.

Get the name "forest plain" for the plain covered with trees, and talk about it.

Then tell the children about another plain, covered with sand, like the sand on the seashore, only not moist and damp like that, but dry and hot and not good to build sand-houses in, and then give them the name "desert."

Talk with them about the troubles of people in crossing the desert, where there are no trees, or springs, or pools of water; how they often suffer from thirst and hunger; why the camel is useful in crossing it; why they do not use horses.

Then tell them, sometimes they come to a place where grass and trees are growing and where there are pools of water, and let them imagine how thankful and glad they are.

Give them the name "oasis," and let them give the definition, as they already know the word "fertile": An oasis is a fertile place in a desert.

XIV. *Water on the Land.*

Ask the children what becomes of all the rain and snow that falls on the tops of mountains. Lead them to see that it sinks into the ground and then appears below as a tiny stream of water trickling out of the ground.

Ask them if this would happen on level ground, and then let them judge of one advantage of mountains to the surrounding country.

Give the name "spring" to the water springing or bubbling out of the ground.

If any children have drunk from a spring, they will tell you the water is cold and pleasant to the taste; then tell them that sometimes the water takes the taste of the earth through which it has passed. If the earth had salt in it, we have a *salt spring;* if there was iron in the earth, we have an *iron spring.*

They know that such springs are called *mineral springs,* and are used as medicine, and they will be able to give quite a list of mineral waters in use now.

In some places, you can tell them, the water when it bubbles out of the ground is hot and is thrown very high into the air.

Give them the name "*Geyser,*" and get the definition.

Let them, in imagination, follow the water when it flows down the mountain, and give it the name "*brook.*"

Lead them to see how one brook meets another and another and flows along, growing larger and broader every minute, until it is a large stream, flowing faster and with more force, until it reaches some large body of water into which it empties.

They will all know it is a "river," and you will need to get the definition from them piece by piece.

Question them as to whether the stream was large or small, fresh or salt, etc., until they can give a good definition: A river is a stream of fresh water flowing over the land.

Ask them if they think the river can run into a larger body of water than itself, or a smaller body, and then talk about the different bodies of water into which it can flow, as, the ocean, a lake, or another large river.

Talk with them about the different ways rivers empty themselves into other bodies, and draw different shaped *mouths* of rivers on the board.

Tell them the place where the river flows into another body of water is called the river's *mouth.*

Go back again to the little spring and brook, and give the name "source" to the place where the river first started.

Let them think what the water would do to the land over which it was flowing; how it would wear for itself a path or road that we call its "bed" or "channel."

Talk with them about the land along the sides of the river, and give the name "bank."

Give the name "branches" to the smaller streams flowing into the river, and compare them with the branches of trees.

Question them about the uses of rivers; what they have seen on their surface; what they have seen on their banks, and how land looks through which no water flows.

In that way they can be taught the words *navigation, manufacturing,* and *irrigation.*

Talk with them about *navigable* rivers.

A VISIT TO A PRIMARY SCHOOL.

BY MRS. A. D. MORRILL, DES MOINES, IOWA.

We will visit Mrs. F.'s school. It is a primary school, and we find thirty little folks seated at long, low tables, upon little chairs,—the oldest not more than ten, the youngest five years of age. All are busy, when we enter, with something. The smallest have blocks, or tablets; the older ones are writing. It does not take long to see that all are at home, and that the "little workers," as Mrs. F. calls her little folks, are working because they love their work.

After various exercises, we notice Mrs. F. looking over the smallest children with a bright smile. Let us listen.

"The third and fourth classes may rise and take their places."

That is all. But look at the children! See how glad they seem! and we hear from smiling lips these exclamations,—

"O, Bertie! we are going to *play multiplication-table!*"

"Yes, I am glad of that!"

"Come, Jessie, let's get our places."

Soon we see about ten children, from six to eight years old, standing in a circle. *Circle!* What does it mean? We never saw a class stand in a *circle!* Neither did we ever see so many happy faces, made so by thoughts of the multiplication-table. Yet these little boys and girls are joyously happy. We will see why.

The circle formed, "perfectly round," Mrs. F. says. The little hands are raised: "Mrs. F., please let me take the honor place?" passes from lip to lip.

But Mrs. F. smiles and says: "Jennie may take the place of honor." And the little girl we had noticed, who seemed too modest to ask for the coveted place, now steps into the centre, and every child becomes a quiet, attentive listener, with ear intently bent toward his or her classmate, now in the centre.

One point is made clear to us. The *place of honor* is in the *centre.*

Mrs. F. commences: "Two times two are how many?"

"Four," quickly answered Jennie. "Three times two?" "Six." "Three times five?" "Fifteen." "Four times four?" "Sixteen." "Nine times three?" "Twenty-one," from Jennie. "Twenty-seven,—twenty-seven,—twenty-seven," from the circle.

The one who gave the correct answer first, now takes his place in the centre.

The exercises continued in this way; the first to correct always taking the "place of honor," until a bright boy took the place, and he seemed determined not to relinquish it by an incorrect answer.

Sure enough, in vain did Mrs. F. ask the most puzzling questions, never going higher than the "four table." Always came the correct answer, promptly, from the little hero.

Finally, Mrs F. said, "Well, George, you may have the privilege of choosing some one in your place." And George, whom all seemed to look upon as the hero, for that time at least, proudly exchanged places with one of his classmates.

After the class had been happily engaged for about eight minutes, Mrs. F. asked: "How many are four times nine?" This was evidently a new question; but it was soon answered by a thoughtful little girl. Then all were reviewed upon the new number, and excused for home, this being the last exercise of the class for the morning. But the little ones all asked, with one accord, to be allowed to "play" longer. This was refused, with the promise of more to-morrow, and the little folks went, wishing to morrow would hasten its coming.

MOLLUSKS.

A Story for the Little Ones.

BY MARGARET M. STONE.

Alice lives in the city, and in summer she is very glad indeed to go away from the crowded streets to the seashore, where she can play all day out of-doors. She loves to sit and watch the breakers as they dash upon the rocks, sending the feathery white spray high up into the air; and then, when she is tired of being still, she takes her wooden spade and digs wells and builds forts in the sand.

One day last summer, as she was running about on the beach, while Aunt Fanny was sitting near by, reading, she suddenly heard her aunt cry, "Oh! my umbrella!"

She looked quickly round, and saw her auntie's umbrella skipping along, over and over, toward the ocean.

"Catch it," exclaimed Aunt Fanny, as she and the little girl both ran in pursuit. On it bounded, however, as if it were alive and determined upon a voyage; and, in a moment, it had leaped into the sea. Aunt Fanny now began to call Alice back, as she feared she was going too near the water. "It was an old thing, and not of much value," she said. "We can't get it now; but perhaps it will be washed on shore by-and-by, so we will walk along and keep it in sight for awhile."

How they laughed to see it tossed along on the waves, first dancing along right side up, then turning over so that they could only see the crooked end of the handle!

"See how it bobs!" said Alice. "I guess it's having a good time. I wonder if the fishes will like it to keep off the sunshine?"

At last it seemed to keep in the same place all the time, and only a little bit of it could be seen, so they concluded it had partly sunk into the sand, and they might as well give it up for lost, for there was no boat near for them to go out in, and they were almost alone on the beach. So Aunt Fanny sat down again, and Alice began to pick up pebbles and shells and bring them for her to look at. Some of them were very smooth and pretty.

Presently Alice came running up, saying, "Oh! Aunt Fanny, I've found a live one. At least, I thought it looked out."

"Yes," said Aunt Fanny, "it is alive, I believe. It is a clam."

"Should you think they would like to have these hard shells on their backs?" asked Alice.

"Oh, yes. They wouldn't know how to get along without them," said Aunt Fanny. "It is their house, you know; and yet, it is a part of themselves, just as your hard bones are part of you. You wouldn't like to lose all your bones, would you?"

"No, indeed! But aren't they funny? Why, they are made inside out, aren't they? I wish my bones were outside, and then I shouldn't feel it if I scratched my hands with the thorns on the rose-bushes, and it wouldn't hurt if Ned pinched me."

"I do not think it would be nice at all for us to be made in that way," said Aunt Fanny. "We should be almost sure to break if we fell down some slippery day. In fact, I think we should be afraid of breaking all the time."

"Oh! that would be bad," said Alice, who generally had several tumbles in a day. "Poor clams! I wish they were made as we are."

"Perhaps that would not be as well for them," said Aunt Fanny. "They do not run about as you do, but live, all the time, in the soft sand, where there is no danger of a bad fall. Look at the one you have in your hand, and I will tell you something more about him. All creatures of this kind are called mollusks,—that is, soft-bodied, because their bodies inside the shell are all soft. Some soft-bodied animals have a house, or shell, all made in one piece, winding about and tapering into a spiral form. You have found some such shells."

"Oh, yes, I know," said Alice. "Snails live in that kind of a house."

"Yes," said Aunt Fanny. "Now, if you examine a shell, you will see lines on it, which we call lines of growth. The shell grows by layers, and we can tell whether it is old or young by the number of lines of growth."

"How funny!" said Alice. "I never thought of there being children among them. I thought they were all alike, just like the stones."

"They are quite different from stones, I can tell you," said Aunt Fanny. "Now, look at your clam again, and you will see that he has two shells put together. We call them valves; and when a shell is made like a clam, we call it a bivalve, because it has two valves, for *bi* means two."

"Then isn't an oyster a two-valve, too?" asked Alice.

"Yes, and they grow with one of the valves fastened to a rock, or to another oyster; and then they just reach out a little way and get the food that comes to them. The two valves are fastened together by something elastic and gluey, and it will stretch, so that they can open their shells a little when they wish. Oysters are interesting because the pretty pearls come from their shells. The lining to the shells is pearly and beautiful; and sometimes grains of sand, or other very little bits of things get between the shell and its lining, and they are soon covered with layers of this pearly lining, and so pearls are made. The nice pearls are not found in common oysters, however. The Chinese sometimes get make believe pearls by partly opening shells and putting in tiny bits of something for the pearl to form around."

"Oh, I wish I could see a pearl all in the shell," said Alice.

"Don't you wish you could see dinner all on the table?" asked Aunt Fanny, getting up from the sand and taking the little girl by the hand to go back to the house.

◆

— As for duty, that's God speaking plainly to each
Of his work in the world; and the wider the reach
Of your effort, the more you are doing for men.
Then the sweeter will be your reward. So what, then,
Does it matter concerning a duty to come?
Every morrow grows out of to-day; and the sum
Of the future is made from the present. Whatever
The morrow may bring will depend on endeavor
Put forth by us now. — *Bright Hours.*

— Infinite good comes from good habits; which must result from the common influence of example, intercourse, knowledge, and actual experience: morality taught by good morals.—*Plato.*

EDITORIAL.

This is the last issue of THE TEACHER for the year 1881. We would most gratefully acknowledge our obligations to the many teachers and friends of education who have generously aided us by their patronage, sympathy, and wise counsel to make our magazine a medium of usefulness in promoting the introduction of improved methods of instruction into the primary and ungraded schools of the country. Experience and observation deepen our conviction of the magnitude of the work intrusted to the primary teacher, and of the necessity of their having a knowledge of the laws that underlie and control all successful teaching and their proper application. They must know thoroughly all they attempt to inculcate, and by such application of their knowledge gain and fix the attention of their pupils. Actual experience is the only absolute proof of teaching-ability, but there are certain qualifications essential to a reasonable success. Unless one has *aspirations* to become a *good* teacher, she had better turn her attention to some other pursuit, where failure will be less fatal in its consequences. There are two kinds of qualifications for eminent success in teaching young children, — natural and acquired. Happy the teacher who possesses both! Unless one has natural leadership, power to control others; some good degree of spirit,—temper,—with power to control it; patience, cheerfulness, enthusiasm, personal magnetism, courage, self-reliance, dignity, celerity of thought and action, and *aptness to teach*, they should never attempt to conduct a primary school. They may study normal methods, acquire a wide range of accurate knowledge; but without natural ability, tact, and adaptation for this noble work of guiding the *first steps* of the children they will be out of place in the elementary schoolroom.

It shall be our aim to make THE TEACHER an aid to those who would use wisely what they already know, and aspire to go forward, using the experience and suggestions of others to add to their skill and effectiveness in their work.

With the closing year we tender to all of our friends the compliments of the approaching holiday season; and especially would we greet the faithful teachers of the primary schools of America, and wish them one and all a "Merry Christmas" and a "Happy New Year."

We hear many complaints from parents, of the excessive use of *tests by writing* on the part of teachers and school superintendents in the primary schools. In some primary and lower-grade grammar classes it is claimed that fully "*one half the time*" of teachers and pupils is employed testing the work done in the regular order during the other half of the school-hours. This is an absurd abuse of a good thing, and should be discontinued. In strictly primary schools it is questionable whether any *formal* written examinations, with a view to rank pupils in their seats or with reference to promotion, can be safely or wisely relied upon as an infallible guide for such action. There should be daily written work in most classes, but it should never be the only test of the pupil's work or of the teacher's effectiveness in her work among young children. The best part of the work done in the formation of correct habits of attention and in the building of character, cannot be shown by any number of written tests. Never run wild after a good thing, even. It is only good when properly applied as to time and purpose.

Teachers, please not forget to make a suitable recognition of the anniversary of the birth of our Saviour. Teachers can, and should, contribute much to make Christmas a season of delight to the children. In the old world it is the most joyous festival of the year, where parents and children unite in deeds of kindness aud benevolence, which keep fresh in mind the spirit of the proclamation of the Master to the shepherds of the East: "Glory to God in the highest, and on earth peace and good-will toward men."

It would be time and effort well spent to explain to them the significance of the day, and aid by advice in the selection of appropriate little gifts. The teachers may intelligently show by deeds of love and by their sympathy that it is a blessing to follow the example of Him who took little children in his arms tenderly and blessed them.

"Though little be the action,
Its heart the Lord will see;
And he will be the witness,
'Ye did it unto me.'"

We notice with pleasure a recent article in the *Popular Science Monthly*, by Dr. Felix L. Oswald, on the too-little-recognized subject of "The Recreation of School Children." Teachers and parents should remember that, in directing the recreations of children, their main purpose is to restore the tone of the mind and its harmony with the physical instincts by supplying the chief deficiencies of ordinary work. For a hard-working blacksmith, fun, pure and simple, would be a sufficient pastime, while brain-workers need a recreation that combines amusement with physical exercise,—the unloosening of the brain fibre with the tension of the muscles. Emulation and the presence of relatives and schoolmates impart to competitive gymnastics a charm which spirited children enjoy. Archery, calesthenics, base-ball, and a well-contested foot-race will awaken the enthusiasm and arouse the mental activity of pupils. On the play-ground such exercises should be divested from the least appearance of being a task, — even children cannot be happy on compulsion.

There is too much in-door work about the present life of our children. Encourage their love of the woods; make holidays a synonym of picnics, excursions, &c. Of all the known modes of inspiration, forest air and the view of a beautiful landscape are the most inexpensive, especially from a moral standpoint, being never followed by a splenetic reaction. A ramble in the depths of a pathless forest, on heights, among rocks, over lofty mountains, and through the meadows, would tend to open well-springs of life to the children of city tenements which they never before enjoyed.

Books for Primary Teachers.

(Continued from October Number.)

METHODS.

Teacher and the Parent. Northend. $1.50. A. S. Barnes & Co., N. Y.

Teacher's Assistant. Northend. $1.50. A. S. Barnes & Co., N. Y.

School Amusements. Root. $1.50. A. S. Barnes & Co., N. Y.

Theory and Practise of Teaching. Page. $1.50. A. S. Barnes & Co.

Teacher's Hand-Book for Classroom. W. F. Phelps. $1.50. A. S. B. & Co,

The Normal Methods of Teaching the Common Branches. Holbrook. $1.50. A. S. Barnes & Co., N. Y.

School Government. F. S. Jewell. $1.50. A. S. Barnes & Co., N. Y.

School Management. Alfred Logan. $1 50. A. S. Barnes & Co., N. Y.

Cowdery's Moral Lessons. 68 cents. Cowperthwait & Co., Philadelphia.

Monroe's Vocal and Physical Training. 72 cents. Cowperthwait & Co.

Art of School Management. J. Baldwin. D. Appleton & Co., N. Y.

Education as a Science. D. Appleton & Co., N. Y.

Topical Course of Study. Stone. A. S. Barnes & Co., N. Y.

Object Lessons. N. A. Calkins. Harper Bros., N. Y.

Suggestions for Teaching Fractions. Davis. C. W. Bardeen, Syracuse.

Hints on Orthoepy. Pooler. C. W. Bardeen, Syracuse, N. Y.

Teacher's Manual for Primary Schools. Z. Richards. A. S. Barnes & Co.

REFERENCE BOOKS.

Webster's Unabridged Dictionary. G. & C. Merriam, Springfield, Mass.

Worcester's Quarto Dictionary. $10.00. J. B. Lippincott & Co., Phila.

Webster's National Pictorial Dictionary. G. & C. Merriam, Springfield.

LANGUAGE EXERCISES.

Thought and Expression. Greene. 24 cents. Cowperthwait & Co.

School-room Exercise Books. Primary series for language study. Spelling and the Training Habits of Observation. De Graff. D. Appleton & Co.

Letters and Lessons in Language. Books I, II. Stickney. D. Appleton & Co., N. Y.

Universal Graded Grammar Blanks. Nos. I, II, III. Orthography, Etymology, Syntax, and Composition. D. Slote & Co., New York.

Selections for Analysis. Northend. 23 cents. William Ware & Co.

Word Primer. Swinton. 15 cents. Ivison, Blakeman, Taylor & Co.

Pictures for Language Lessons. 12 Nos. 25 cents. D. Lothrop & Co

Harvey's Language Course. Van Antwerp, Bragg & Co., Cincinnati.

Object Lessons: Things Taught, Composition, &c. Van Antwerp, B. & Co.

Orthography. Shattuck and Laylander. Mills & Co., Des Moines.

Kay's Progressive Reader and Definer. T. Elmwood Zell, Philadelphia.

First Book in Composition. Brookfield. A. S. Barnes & Co., N. Y.

Analytical Orthography. Wright. A. S. Barnes & Co., N. Y.

Easy Lessons in Language, with illus. and diagrams. Clark. A. S. B. & Co.

The Word-Builder. Parker and Watson. A. S. Barnes & Co., N. Y.

ARITHMETIC HELPS.

Ficklin's Table-book. A. S. Barnes & Co., N. Y.

Peck's Oral and Written Arithmetic. 40 cents. A. S. Barnes & Co., N. Y.

Underhill's American Primer and Table-book. 10 cents. Collins & Bro.

Child's Book of Arithmetic. Colburn. 18 cents. Cowperthwait & Co.

Primary Lessons in Number. Hagar. 22 cents. Cowperthwait & Co.

Franklin Primary. 20 cents. William Ware & Co., Boston.

Franklin Elementary. 35 cents. William Ware & Co., Boston.

Walton's Arithmetical Table. $7.20 per hundred. Wm. Ware & Co., Boston
Walton's Primary Arithmetic. 18 cents. William Ware & Co., Boston.
Walton's Intell. Arithmetic. 30 cents. William Ware & Co., Boston.
Walton's Metric System. 15 cents. William Ware & Co., Boston.
Walton and Cogswell's Book of Problems in Arithmetic, with Key. 54 cents. William Ware & Co., Boston.
Putnam Drill and Review Card. $3.60 per hundred. Wm. Ware & Co.
Arithmetical Charts for Oral Practice. Walton and Cogswell. $2 00 per set. William Ware & Co., Boston.
Faxon's Miscellaneous Review Card. $4.80 per 100. Wm. Ware & Co.
Faxon's Combination Review Card. $7.80 per 100. Wm. Ware & Co.
Arithmetical Frame with Key. John Gould, New York.
First Lessons in Numbers, Oral and Written. R. S. Davis & Co.
Robinson's First Book in Arithmetic. 35 cts. Fish. Ivison, B., T. & Co.
Practical Examples in Numbers. Renck. A. S. Barnes & Co., N. Y.
Primary and Intellectual Arithmetic, First Book. Davies. A. S. B. & Co.

HISTORY.

English History and Short Stories. 70 cents. A. S. Barnes & Co., N. Y.
History of Rome. Ricord. $1.25. A. S. Barnes & Co., N. Y.
Scott's Manual of U. S. History. 55 cents. Collins & Brother, N. Y.
Scott's Review History of U. S. Collins & Brother, N. Y.
Child's Pictoral Hist. of U. S. Goodrich. 60 cts. E. H. Butler & Co., Phila.
Goodrich's Child's History of U. S. 36 cents. Cowperthwait & Co.
Outlines of English History. Edwards. William Ware & Co., Boston.
First Lesson in History of U. S. 60 cents. William Ware & Co., Boston.
Books of History. Three Parts. Parley. 90 cts. each. Wm. Ware & Co.
Primary History of U. S. Swinton. 57 cts. Ivison, Blakeman, T. & Co.
Youth's History of U. S. Monteith. A. S. Barnes & Co., N. Y.

GEOGRAPHY.

First Lessons in Plan of Object Teaching. Monteith. 25 cts. A. S. B. & Co.
Apgar's Geographical Drawing Books. 42 cents. Cowperthwait & Co.
First Lesson in Geography. Mitchell. 36 cts. E. H. Butler & Co., Phila.
New Primary Geography. Mitchell. 60 cents. E. H. Butler & Co.
Our World, No. I.; First Lessons. Hall. 70 cents. Ginn, Heath & Co.
Our World, No. II.; Second Series. Hall. $1.45. Ginn, Heath & Co.
Elementary Geography. Monteith. A. S. Barnes & Co., N. Y.
Geographical Plays for Schools. Andrews. Lee & Shepard, Boston.
Appleton's Elementary Geography. D. Appleton & Co., N. Y.
Introduction to Manual of Geography. Monteith. A. S. Barnes & Co.
Outlines of Map Drawing with Diagrams. Bangs. H. H. Peck, New Haven.

ELEMENTARY SCIENCE.

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(To be continued.)

Lesson on Kindness to Animals.

LESSON V.—THE HORSE.

[To be read to pupils by Primary Teachers.]

On one of the most traveled roads, just out of the great city of London, England, at the foot of a hill is hung this sign:—

"*Horse's Petition to his Driver.*"
"Up the hill whip me not,
Down the hill hurry me not,
In the stable forget me not,
Of hay and grain rob me not,
Of clean water stint me not,
With sponge and brush neglect me not,
Of soft, dry bed deprive me not,
When sick or cold chill me not,
With bit or reign jerk me not,
And, when angry, strike me not."

To which should be added:—

With tight check-rein, check me not,
And do not cover my eyes with blinders.

Mankind can never pay the debt they owe to the horse. Without him our carts, and wagons, and carriages, and saddles, and sleds and sleighs in winter would be almost useless. We should be compelled to ride after oxen, or go on foot. Horses are now found in most parts of the world, toiling in man's service, receiving in return only their simple food and water, with shelter from the weather sometimes in very cold stables in winter and very hot stables in summer. In Arabia the horses live in tents with the rest of the family, and sleep among the children, whom they are very careful not to harm. The Arabians never whip them.

Horses, like human beings, are sometimes sick and sometimes well, sometimes strong and sometimes weak, They live, *when kindly treated*, thirty to forty or more years, but, like human beings, they require plenty of wholesome food and water, also regular exercise, fresh air, sunlight, and clean stables. Their stomachs are small, and to keep them in health they should be fed and watered often. In Europe you will often see drivers giving their horses slices of bread.

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* *Lessons on Kindness to Animals.* By GEO T. ANGELL, Esq., President of the Massachusetts Society for the Prevention of Cruelty to Animals.

Some persons are very cruel to their horses by letting them go a long time without food and water. Some persons give their horses so little to eat that the horses become very poor. In the little village in Massachusetts near Boston, where I live, a man who pretended to be respectable kept his poor horse half starved; but one day the village boys got together, and each contributed five cents, and they bought a bag of oats, and that night they went to the man's barn and gave the poor horse a good feed, and left the bag with a label on it, — "*Presented by the Society for the Prevention of Cruelty to Animals.*" After that the poor horse fared better.

Horses know when they are badly treated. I used to drive a very spirited, but perfectly safe, horse which I never struck with the whip. One day when the horse was tied at a neighbor's, some young people thought it would be a good joke to have a free ride. The horse would not have minded that; but the first thing they did was to strike him with the whip. He gave them a good deal faster ride than they wanted, and at the next street-corner upset the carriage and emptied them out; then he ran a few rods further, and then stopped and commenced quietly eating the grass by the side of the road. Those young people received a lesson on the importance of treating an intelligent and spirited horse kindly which they will never forget.

I used a drive another horse as spirited as the one I have just told you about, and I always treated him kindly. One day he was trotting down a steep hill near Boston with a heavy two-seated carriage, when both the hold-backs broke, and the carriage came upon him. He stopped almost instantly, and held the carriage until all could get out. Do you think if he had been used to being whipped and cruelly treated, he would have done that?

(The Horse to be continued in next number.)

SOME QUESTIONS.

[Others to be added by teacher.]

Where was the horse's petition hung?

What was the horse's petition?

What should be added to it?

What should we b ecompelled to do if there were no horses?

What pay do the horses get for their labor?

Where do horses live in Arabia?

Do the Arabians whip them?

Do horses vary in health and strength, like men?

How long will horses live when kindly treated?

Why should they be fed and watered often?

What do their drivers often give them in Europe?

What did the boys in a Massachusetts village do to the man who half-starved his horse?

What can you tell about the horse that ran away?

What about the horse when the hold-backs broke?

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OUR NOTE-BOOK.

CHRISTMAS EVE.

BY MARGARET M. STONE.

In my mind I hear the music
Of fairy bells above the roofs,
And I listen to the clatter
Of the tiny reindeers' hoofs,

As the fabled sleigh comes fleetly,
Bearing on its wond'rous load,
Over frozen lake and mountain,
Down the pleasant dream-land road;

And I seem to see the driver
With his beard so snowy white,
As he dashes o'er the house-tops
In the clear and frosty night;—

See his cap and warm fur wrappings,
And his face so queer and quaint,—
It is fairly seamed with laughter,
He is such a merry saint.

Sure it is a wizard's bundle,
That he carries on his back,
Else so many things could never
Come from out so small a pack,—

Small enough to go down chimneys,
Yet 'twill hold so many toys
That there seems to be a plenty
For the little girls and boys.

Judith, run, hang up the stockings
In the grand old fire-place.
What will Santa Claus give Hattie,
Edith, Grosvenor, Mabel, Grace?

Maybe he will bring some candy,
Pretty books of pictures, too;
Dolls and soldiers, nice warm mittens,
And a wooden boat and crew.

But, among so many children,
I'm afraid that there are some
Who, alas, will watch but vainly
For St. Nicholas to come.

Catch him, Wintie, at the chimney
When you see him coming down;
Ask him if he'll give a present
To all the children in the town.

Hold him, Robert, till he gives them
Shawls and jackets, nuts and cake:
Say they'd like to find some playthings
In their stockings when they wake.

Then we'll have a Merry Christmas,
And the gladsome chimes we'll ring,
And we'll try to join the chorus
Of the song the angels sing.

A FACT FOR TEACHERS.

BY REV. W. M. THAYER.

Educators say that the true way of educating the young is, not to discipline them so much for a particular vocation, as to develop their threefold nature harmoniously and as fully as possible. Then, manhood and womanhood finds them qualified to fill any position to which Providence leads. An eminent illustration is found in that queenly woman,—the widow of the late lamented Garfield. Her early education was critical,—just as thorough as the schools of her time and section of the country furnished. She improved her opportunities to the best of her ability, and made the most of herself possible. That is, her physical, mental, and moral powers were trained as well as she and her teachers knew. The result was that, in womanhood, she was qualified to fill any position,—housekeeper, wife of a teacher, preacher, general, statesman, and president. She was at home in the most literary and famed circles, as well as in those of common life. She graced all positions. She was as successful in the

White House as she was in her own first home of married life at Hiram. All because she was properly educated!

SCRUB.

BY MRS. LOUISA P. HOPKINS.

Recess!
A din, a shout, a whoop of joy;
You'd think each girl an arrant boy,
I must confess.

The ball!
The bat! now run and leap:
The whole school, like a flock of sheep,
Jump o'er the wall.

Now stand!
The bases; where's the pitch and catch?
See how the runners race and snatch;
Unruly band!

Right field,
Left field, and short-stop; all are set.
Now, who the victory will get,
Nor ever yield?

Ted's out:
Catch Ethel, too, upon the fly.
Foul,—out; hit Willie in the eye;
The noisy rout!

Short-stop,
Quick! catch that liner coming swift;
Courtney's in licks; that ball is miffed
By Toady Hop.

Scrub one
For after school; the bell has rung;
No better game is said or sung
Than this just done.

The throng is great, my child! But at thy side
Thy Father walks. Then be not terrified,
For I am with thee; will thy foes command
To let thee freely pass; will take thy hand,
And through the throng
Lead safe along my child.

We must not hope to be mowers,
And to gather the ripe gold ears,
Unless we have first been sowers,
And watered the flowers with tears.

It is not just as we *take* it,
This mystical world of ours;
Life's field will yield as we make it
A harvest of thorns or of flowers.
—*Goethe.*

"HOW NOT TO TEACH."

William M. Giffin, Principal of the Newark (N. J.) City Training School, has published a valuable little manual, entitled "How Not to Teach," or "One Hundred Things the Teachers Should Not Do," with reasons why (price, 15 cts.;) and has kindly given us permission to quote the following suggestions

ON TEACHING:

A teacher should not call on a pupil to recite before asking a question.

The rest of the class will lose interest, thinking the question is for the pupil named; when, if the question is asked first, all will give attention, not knowing who may be called upon to answer it.

A teacher should not write a copy for a pupil or a class in a hasty, careless manner.

She is not only setting a *copy*, but is also setting an *example;* and bad work will be the result.

A teacher should not ask any question of a class that does not require them to think.

Their answers become mechanical and they become restless and disorderly. If no thought is required, there is no development of the mind; hence, on teaching has been done.

A teacher should not try to teach reading before obtaining some knowledge of phonetics, the science of the human voice.

She cannot teach a pupil how to pronounce a word unless she knows how herself, She does not know, when she cannot tell the pupil just how to place his organs of speech to pronounce any word. Not one in ten who says *wich* for *which* knows that *wh* is sounded *hw.*

A teacher should not send a pupil to the blackboard, pointer in hand, to read a sentence.

The pupil will point to each word, and therefore will not read naturally, but as follows: I—see—the—boy.

A teacher should not teach the fundamental rules in arithmetic abstractly, but should use the objective method.

"Sounds which address the ear are lost and die
In one short hour; but that which strikes the eye
Lives long upon the mind; the faithful sight
Engraves the knowledge with a beam of light."

A teacher should not ask a question of a class, as a class, that can be answered in more than one way.

She will receive from all parts of the room, "Yes, ma'am; No, ma'am;" and in a moment the class is in confusion. If she desires to ask a question of the class, she can say: "How many think so? hands up!"

A teacher should not allow a word to be mispronounced, or an error in grammar to be made, without correcting it at once.

This is a part of her work. An excuse that she has not time, is no excuse. Has she finished teaching the word *what*, so long as the pupil calls it *wat?*

A teacher should not call on the bright pupils any more, if as much, as upon the dull ones.

The diamond will be in the rough unless it is polished. The dull pupils will not learn if the bright ones do all the talking, while the latter will learn by hearing the dull ones. Bright pupils are, as a rule, attentive, while the dull ones are inattentive.

A teacher should not become tired of correcting faults of pupils, or of telling them how and what to do.

Children have rights, and so long as they do not understand a subject, they have a right to ask and receive explanations. She who acts upon this, will, in God's good time, reap her reward.

A teacher should not do for a pupil what the pupil can, with reasonable effort, do for himself.

The mind can become vigorous only by constant exercise. A class will soon learn to wait for the teacher to do its work and answer its questions. Children should be trained to observe, to do, and to tell.

A teacher should not begin a recitation until she has prepared the lesson herself, and decided how much of the work the pupils can do for themselves.

A teacher who does not prepare herself, will unconsciously be doing for her class what they might have done for themselves.

A teacher should not allow more than one pupil to ask or answer a given question at the same time.

When not having a concert exercise, it is not possible for her to distinguish more than one at a time. It also divides the attention of the class and teacher. Again, it is not good manners for one to interrupt another.

A teacher shoutd not apply to another pupil for an answer to a question, before the one who is reciting has finished.

If a pupil desires to finish reciting, it discourages him, and also deprives him of his granted privilege, for the the teacher to say: "Oh, sit down; you are too slow!" If he shows no desire to recite, the teacher may call on another.

A teacher should not ask a second question until the first has in some way been satisfactorily disposed of.

Time should not be taken to ask questions that are not worth answering.

A teacher should not allow a pupil to ask any questions, give an opinion, or leave his seat to show her work on his slate, without first obtaining her permission.

It will cause constant interruptions, and in a short time it will be hard to tell who is teacher and who is pupil. There should be a time for everything and everything should be in its time. It also has a tendency to make the pupils saucy.

A teacher should not have too large a division reciting at one time.

It is impossible to do justice to all, if more than twenty are reciting. More, I think, can be accomplished with twenty pupils in fifteen minutes, than can be accomplished with fifty pupils in forty minutes.

A teacher having charge of a school should not enter a room and break into the recitation with a question of his own, without first asking permission of the class teacher, or excusing himself for his interruption.

It is just as ill-mannered to interrupt a person speaking in a school-room, as it is in a parlor. It sets a bad example before the children.

A teacher should not allow a pupil to give a silly or what the pupil thinks is a "cute" or funny answer to a question.

If she encourages it, she will, in a short time, have a class trying to be more funny than wise.

A teacher should not tell one class to be doing "something" on their slates while another class is reciting.

"Something" is not definite. A class should always have an explicit direction or copy. A class told to do *something*, will, no doubt, make funny pictures.

A teacher should not adopt a loud or unnataral tone of voice when teaching.

Let her be herself, and not overtax her organs of speech. The whole class will adopt the same tone, and tumult and disorder will be the result.

A teacher should not allow a pupil to answer a question with the rising inflection.

The teacher is asking and not answering questions. It teaches the children to be undecided, and deprives them of independent thought.

A teacher should not call the answer to a question wrong, if it is not in the exact words of the text-book.

There is more than one way to express the same thought. If the answer is faulty, correct it; but commend the pupil for his effort if it is in the right direction, and you will not have dampened his ardor.

A teacher should not refuse to excuse a pupil from standing during a recitation if he complains of not feeling well.

If he is sick, it is very unkind to compel him to stand; and if he is not sick, your kindness will be the best way to punish him. If his sickness becomes chronic, investigate the matter, and put an end to the trouble.

A teacher should not teach a pupil how to bound a State before having taught him the points of the compass in his own town, and required of him the boundaries of his school and the town or city in which he lives.

Pupils must first be made to understand what is meant by north, south, east, and west, or they will receive the impression that north is up-hill, south down-hill, etc.

A teacher should not ask pupils of ten years of age, or less, to learn more than five new words a day in spelling.

Five words a day for four days will be twenty words a week, giving one day for review. Twenty words a week will be eight hundred a year,—quite enough for pupils of this age to learn.

A teacher should not teach spelling orally.

The pupils will seldom, if ever, have occasion to spell the words orally in after-life. It is a known fact that children will oftentimes spell a word correctly orally, and will spell it incorrectly if asked to write it in a sentence.

A teacher should not take time to teach the youngest children the names of the letters.

A child can be made to understand that certain lines placed thus, , form a right-angled triangle, and that other certain lines placed thus, *leg*, form the word 'leg.' His knowing that the first letter is *l*, the second *e*, and the third *g*, does not help him any; in fact, his natural reasoning might lead him to think the word was *ell—e—gee* (elegy).

APPLETONS' ELEMENTARY READING CHARTS.

BY MRS. REBECCA D. RICKOFF.

THE WORD AND PHONIC METHOD is too often understood to mean merely the union of *naming words at sight* with *spelling words by sound;* that the Word and Phonic Method as used in APPLETONS' READERS means much more than this, it is the aim of these charts to illustrate. It is their design to set forth, in a graphic way the importance of the word as a whole; the principle which underlies the representation of an idea by a printed word; the relations of the words, one to another, in phrase and sentence; and the value of phrasing as a means of making the thought clear.

Another feature of the *Appleton Method*, one which is prominent in the First Reader and is given its due importance in the Second, is here treated at much length, and "pictured out" in a way that, it is hoped, will prove acceptable to both teacher and pupil. It is *the obtaining of the correct sound of the letter from the analysis of the spoken word.* It takes a trained ear to detect the difference between the sounds of letters given singly, especially if those sounds bear a strong resemblance to each other, as they often do.

Children's ears are not trained, nor have young pupils the habits of close observation; hence it is exceedingly difficult for them to detect differences — as, for instance, between the sounds of *m* and *n*, *d* and *t*, *ĕ* and *ĭ*, if those sounds are given to them simply as independent sounds which they are to use in making out, or making up words. The children may pronounce the sounds correctly while imitating the teacher, but when making an effort on their own part they are apt to become confused, and being unable to decide as to the correct sound of a letter, have no means of setting themselves right. If, however, they have first obtained the sound from the slow pronunciation of some well-known word, and KNOW that they have thus obtained it, then not only does "the sound become the key to the word," but *the word also becomes a key to the sound.* Take, for example, *pen* and *pin*. How much more readily does the child recognize the difference between the sounds of *ĕ* and *ĭ* if he knows that *pen*, spoken slowly, gives *ĕ*, and *pin* gives *ĭ*, than if he is simply told that one is *ĕ* and the other *ĭ!* And how much more helpful is the knowledge *gained* in the first way than that *given* in the second!

Upon this principal of *using a familiar spoken word as a key to the correct enunciation of a new sound, and then the sound thus learned as a key to the pronunciation of other words,* is each new sound introduced into these Charts.

THE PICTURE-PHRASES are intended to teach the words *a*, *the*, *and*, and similiar words, in such a way as to make their relations and subordination to other words very clear to the child; and to train him to pronounce them, in connection with other words, both readily and correctly. They are also used further on to add interest, variety, and sprightliness to the reading-lessons, so that each lesson, being filled with thoughts which *can* be given with expression, becomes in truth a *reading*-lesson, and not a mere pronouncing of words.

OBJECT-LESSON ON A PRINTED WORD. — When a child recognizes and names a word at sight, he does it in the same way that he recognizes and names a chair, or any other object, by means of the mental picture of the *whole thing* which is formed in his mind and the recollection of the name associated with it; but no sooner has a bright child learned to recognize a thing as a whole thing, be it a chair or a word, than he begins to perceive that this whole is made up of parts. The teacher, desiring to develop her class as the bright child unfolds under happy influences, avails herself of this tendency on the part of the children, and, by means of a simple object-lesson, leads them to see not only that the word has parts, but also to discover the number and order of those parts. This analysis of a printed word into its parts is the first step in learning to spell, but a step which is too often taken unconsciously on the part of the teacher as well as the pupil; while, if it were taken consciously, as a lesson given with a clearly defined aim, it would be taken more firmly and with more lasting results.

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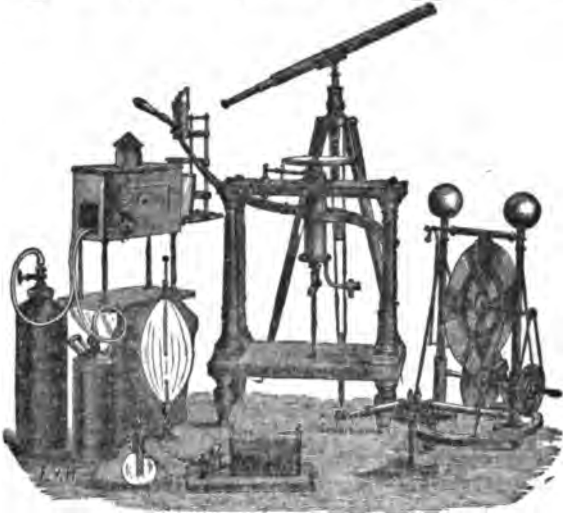

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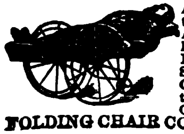

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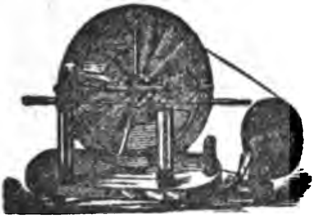

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THE

PRIMARY TEACHER.

VOL. V. JANUARY, 1882. NO. 5.

MAKE THE CHILDREN HAPPY: HOW?

BY ANNA B. BADLAM.

I am inclined to question the old saying, "Our lives are what we make them. Are they not to a certain extent what *others* make them?

Looking at the men and women we are constantly meeting, we find in our midst the gay and the sad; cheerful and moody; selfish and unselfish; wise and foolish. What has made this difference? How is it that some are so much better prepared to meet the various changes of life than others? Why is it that some lives are a success, others a failure?

All will admit that early training lays the *foundation* of character. That the impressions of early childhood, whether of good or evil, are lasting, and have an influence upon the life of the future man or woman whose character is perhaps unconsciously forming. As teachers, let us consider the subject, looking upon the world of little folks about us.

We gather our school children from their various homes; as varied in their influences upon the individual dispositions and temperaments as the homes themselves. Mingled in our classes may be found the "little ones" from homes of plenty or poverty, peace or discord, honesty or dishonesty, love or hatred, prayer or profanity. For the first time, perhaps, they are brought together, under *one* influence, an influence all-pervading, and I do not over-estimate it when I say, life-lasting. How shall we make this influence felt? How "lay the foundation" of true manhood and womanhood?

Love must be the ruling power. Not only must we love the children, but we must teach them to love us and each other. It must be a universal love, reaching out to the poorest and weakest members of the class. A love which will prompt the strong to help the weak, and give the weak confidence to seek the protection of the strong.

Theory is not always practice, however. In what ways can we do this? Children are quick observers, and we must look to *ourselves*, in our intercourse with them, that we exercise ever *loving counsel* and *kindly courtesy*, and we cannot fail to see the result in their intercourse with each other. Let me cite one or two instances.

Last spring, when Barnum's circus was in Boston, the children from a South End grammar school had permission to stand, with their teachers, upon the steps of the neighboring houses, while the procession was passing, on the morning of the grand parade. In one class was a little cripple. As her companions assembled on the steps of one of the houses, all equally anxious to secure a good position, a dozen eager voices cried: "Miss Wilson! Miss Wilson! Here is room for Nellie?" "Let Nellie come here!" "Here is a nice place where she wont get hurt!" It was a little thing, yet it plainly showed the love and thoughtfulness of the children towards one weaker than themselves.

In my own school was a little boy who was most unfortunate with his his slate-pencils. I remember well, one morning an older boy coming to school, displaying, with much pride, his freshly-sharpened pencils. Yet, when later in the session, his less fortunate companion complained that he had just broken his, one of the much-cherished pencils of the other was kindly offered and gratefully accepted. While a little girl who wrote easily and naturally a beautiful hand, would bend patiently over some tearful little friend, showing her, with all the gravity of an older person, just how to form the troublesome letters.

Cheerfulness must walk hand in hand with love. The whole atmosphere of the school-room must be contagious of cheerfulness. Let the walls be made attractive by pictures pleasing to childish eyes; the windows by plants, a globe of fish, or even a pet bird. Surprise the children from time to time by some new attraction,—if only a fresh picture upon the blackboard,—that they may feel you are thinking of them, and and doing what will give them pleasure.

Let us make *ourselves* attractive to the children. We are careful to make ourselves pleasing to our friends; why not to the little ones? Try the effect of a new ribbon for the hair or neck; it will hardly fail to call forth some expression of pleasure. I well remember a friend wearing her hair dressed differently from her usual way, one morning, and being told by a little tot of six years: "Why, Miss Miller, how nice you look! You looked so young, I did not know you." While to my own confusion, before a number of visitors, a new dress worn for the first time, was much admired, and I was told: "I like to look at you in that dress; shall you wear it all the time?"

So simple a thing as a few fresh flowers will, if placed in sight of the children, brighten their little faces for a whole session. With what pleasure did a class of children watch the movements of a pet turtle, kept in the school-house one winter! Much to their delight, he had become very tame, and always, when the children were singing softly, would lift his head above the edge of the glass dish in which he was kept, turning it from side to side, apparently enjoying his part of the fun as much as the children.

"A merry heart doeth good like a medicine;" and what is more enjoyable than the happy laughter of childhood? "Mother Goose," the beloved songstress of childhood, is now believed to have had a real existence, here in Boston, and the rhymes and songs so dear to childish ears and lips to-day, delighted her audience of grandchildren, as they clustered about her knee in the long winter evenings. While to her son-in-law, who took care to have them published, are the little ones of to-day indebted for the copies of the old rhymes, of which they never seem to tire. One cannot deny they are pure nonsense, and yet to every little trusting heart, "Bopeep" and little "Jack Horner" are as real personages as Washington and Franklin to older and less trusting ones.

Do not, then, be afraid of nonsense in the school-room. Provoke a hearty laugh, if *not* at the expense of another's feelings. Send the children from the school-room with smiling faces. How often, seeing discontented faces among the children, when,—perhaps, it was storming heavily, and the one-session bell had not rung,—have I sent them smilingly home by saying, "Never mind, we are not sugar nor salt; so the rain can't hurt *us;* we can't melt;" while, as a result, there would be a very good attendance in the afternoon.

Yet, in spite of the nonsense, earnestness, too, must lend her aid. There *must* be earnest work in the school room,—not arbitrarily nor blindly exacted, but willingly and understandingly performed. How many of us, I wonder, would have sat so contentedly, sewing our little patch-work squares, had we not in imagination beheld a bright vision of the many-hued quilt in which they should hold a place!

Let the children recognize the *use* of the work we expect from them. Let them feel that the little columns of figures they add, day by day, correspond with the man's work as book-keeper; that their little struggles to express their thoughts upon paper, correspond with the work of the clergyman, lecturer, or story-writer; that a knowledge of the words and phrases with which they are busied, will enable them to read for themselves, the stories they delight to have read to them.

The very lines and angles which they are patiently drawing upon their slates, must come into every architect's plan, however simply drawn. The various colors, with their numerons shades, tints, and hues, are the artist's constant study. The plants with their roots, leaves, and blossoms, must be known to the physician. The parts of the body, and their structure, must be known to the surgeon.

We older people can look forward, in the pursuit of any study, knowing to what it will lead, and the benefit it will be to us; but to a little child, much of the work expected of him will be irksome and wearisome, unless he is made to feel that he is doing as real work for his little hands and brains, as older and wiser ones. Then with love, cheerfulness, and earnestness, let us work for the happiness of the children, remembering they are to be the men and women of the future, to glorify or blemish the Nation's name, recalling to our minds the beautiful words of Mary Howitt's "Plea of the Children:"

"Give us light amid our darkness,
Let us know the good from ill,
Hate us not for all our blindness,
Love us, lead us, show us kindness,
You can make us what you will.

"We shall be what you will make us:
Make us wise, and make us good,
Make us strong, for time of trial,
Teach us temperance, self-denial,
Patience, kindness, fortitude.

"Send us to our loving mothers,
Angel-stamped in heart and brow;
We may be our fathers' teachers;
We may be the mightiest preachers
In the day that dawneth now."

Doubtless we will get discouraged,—may gain the feeling that too much is expected from us, and too little from home; yet let us remember that we are dealing with hearts and brains open to every impression; that we are sowing the seed which may for a time seem dormant, yet which will, and must, at some future day, spring into life and bear fruit.

Let us remember, that it is only by patient labor that the ant builds its hill, grain by grain. Straw, twig, and leaf must be brought again and again before the bird has formed her perfect nest. "Little by little," is Nature's rule. The tiniest streamlet, flowing ultimately to the sea, teaches its own little lesson, as does every thing in Nature's school.

◆

— Drink the cup of content with no lingering glances
Behind. There is joy in the present. Romances
Forever abide in the future.

— *Dr. Holland's "Geraldine."*

ZOOLOGY FOR THE LITTLE ONES.

BY CLARABELLE GILMAN.

XIII.

THE LOBSTER.

The lobster, with his coat of mail and his bristling array of joints and claws, and jaws, presents to us an entirely new type of structure. The great world of articulates, or ringed animals, now opens before us, and will surely give as much pleasure to teachers as to pupils, if carefully studied.

A strange difficulty, quite the reverse of any that we have encountered before, meets us at the outset, for our specimens are not too small, but too large, for convenient use Nature seems to have anticipated this difficulty, however, giving us in the crayfish, which abounds in many parts of our country, an almost perfect lobster in miniature. With a crayfish for each scholar, and a lobster for the teacher, we are equipped for an interesting lesson.

The big head and long tail, the powerful claws, the long feelers or antennæ, and the number of legs and jaws, will quickly be noticed by the children. If one of the boys has ever happened to see a lobster-pot hauled in, he will enjoy telling how the strange creatures are caught. But we must not stop with these, and so we set to work to disentangle all the snarl of appendages.

First, however, we have the children examine the abdomen, which they call "the long tail," and lead them to see that it is composed of several pieces, or rings. It puzzles us at first to determine the number of these rings, but we finally decide that there are seven. How do we know that the slender tail-piece, or telson, at the end, really is the last segment of the abdomen? Because, if we should cut it off, we should take out a slice along the middle line of the body, just as in cutting off any other ring of the abdomen; and also, because there is nothing on the other side of the body to correspond to the telson, while appendages are always arranged in pairs.

"Do you find any jointed pieces growing from the rings of the abdomen?"

"There are little flaps on the under side of the rings"

"If you could see a lobster or a crayfish in the water, you would find these flaps moving like so many paddles. Of what use are they, do you think?"

"I think they help him swim."

"They do; and so they are called swimmerets, or little swimmers.

The mother-lobster uses them, too, in carrying her eggs. How many swimmerets are there on a ring?"

"There are two."

"See if there is a pair of swimmerets on *every* ring."

"There aren't any on the last one."

"Are the swimmerets just alike on all the rings?"

"The pair at the end are ever so much larger than the others."

"This pair, together with the end-piece of the abdomen, are used as a tail-fin by the lobster. He can strike the water with this fin with such force as to throw himself backward several feet. Do you see why these swimmerets at the end need to be so much larger than the others?"

"O yes! so that he can strike hard with them."

"These swimmerets have to work much harder than the others, and they are large and strong in order that they may be able to do their work. Once more, tell me what grows from the under side of every joint except the last."

"A pair of swimmerets"

"Now we turn our attention to the other large divisions of the body; the head-thorax, or cephalothorax, as it is called. We first get the idea that the shell is a great shield, protecting the most delicate organs, then we wait for the children's observations upon the appendages of this region.

"There are eight claws and two big claws." "There's a pair of long feelers." "There's another pair that look like double feelers." "There are lots of little legs and things next to the big claws." "There are teeth on this pair of little legs." "What does he need so so many legs for?" "Is this sharp point on the front of his head his nose?"

A little thought, aided by the right kind of questions, will convince pupils that all these jaws are for use in crushing food. They will see, too, that the sharp rostrum, or beak, which is simply a projection from the shell, cannot be a nose, an organ of smell. They can discover the position of the mouth, as well as the use of the big claws in seizing prey, and of the antennæ as feelers. They will also notice the sharp teeth on one big claw, used in catching food, and the blunt teeth on the other claw, by which the lobster anchors himself to seaweeds or some other support.

"How many appendages are there about the mouth? Carefully we lift them, one at a time, till we have counted the three pairs of jaw-feet placed next to the great claws, the two pairs of manillæ or little jaws, and the strong pair of mandibles, meeting directly over the mouth.

Now we have a hard question for scholars who are old enough to reason about it: Are these appendages borne on rings of the body, like those of the abdomen? To answer this, we must examine the under-side of the cephalothorax, where the crowded segments bearing the walking-legs can be made out, and from this fact we draw the inference that the other appendages are also borne on segments which are so crowded and fused together toward the head as to be indistinguishable from one another.

"You may put your probes into the lobster's mouth, and see if you can tell where they go."

"Mine goes into the top of his head."

"But where ought the food to go from the mouth?"

"It must go to the stomach."

"Where do you think his stomach must be, then?"

"Up in the top of his head. What a funny place!"

"The stomach is not only in a curious place, it is also a wonderful machine. As if the lobster hadn't jaws enough to tear and chew his food, he has teeth inside his stomach to finish the work. His food is so finely ground by these teeth that it will pass through a strainer of little hairs into the back part of the stomach."

"Just inside the base of the small antennæ are hidden the ears, tiny sacs filled with fluid in which are small particles of earth or stones."

We notice the eyes, mounted on stalks, and each one composed of a large number of smaller eyes.

I have seen young lobsters that were scarcely an inch long,—beautiful, transparent creatures; and here is one that was caught for me last summer, that is not more than five or six inches long. We may find them of all sizes, up to that of this old one that I hold in my hand. How do you suppose they can grow so much inside this hard shell?"

"Doesn't the shell grow, too, like the snail-shell?"

"No; the shell never grows."

"I should think it would get too tight for him."

"What do you do, Ernest, when you outgrow your jacket?"

"I get another one that's bigger."

"Do you put it on outside the tight one?"

"Why, no; I pull off the tight one first?"

"That's just what the lobster does. He pulls off his old shell, or rather pulls himself out of it. First, the shell splits here on the back between the head-thorax and the abdomen, or down the middle of the head-thorax, or sometimes in both places; then the poor fellow wriggles and twists till he gets his head and legs out of their sheath, when, with one pull, he frees the rest of his body. The new shell grows before the old comes off, but it is very soft and loose, so that the body can grow to fill it. This shell hardens and thickens in a few days, but in this short time the lobster has grown as much as he will until he casts his shell again."

The bleached shells of young horse-shoe crabs can often be found on our beaches, though the most perfect specimens lie half-buried in the mud-flats along many of the little salt creeks, where the crabs go to moult. By soaking these dry shells for awhile, they become as flexible as in the living animal, and on opening them carefully, we can see inside the perfect lining of the stomach, which has been cast with the shell. This will explain to the children, what they never could understand otherwise, how the lobster can cast off the lining of his stomach with the outer shell.

Lifting the great shield of the cephalothorax, on either side we find the gills, in what may be called the lobster's vest-pockets. The gills are white, comb-like bodies; some attached to the bases of the legs, others to the inside of the pocket, or gill-cavity. The children must not fail to see the long tongue-like piece at the front of the pocket, that is constantly scooping out the water at that end, and thus making a current over the gills.

Lastly, we find the position of the heart, just behind the seam that passes transversely across the back of the cephalothorax. This curious six-sided little organ sends the purified blood from the gills over the whole body.

◆

AN EXERCISE IN CHEMISTRY.

BY I. J. OSBUN.

The following exercise is to teach that air, when mixed with the breath from a large number of persons, or with the air that comes from a coal-fire or a number of lamps or gas-flames, is poisonous to breathe.

Some experiments are to be performed with apparatus, which may be constructed by following the directions given below.

Collect the following objects: A bottle which will hold not more than one-fourth of a pint, and which has a mouth about one inch in diameter; a cork to fit this bottle; four clay tobacco-pipes; three corks to fit the pipe-bowls; a small, round file; a lump of quick-lime (lime used for making plaster or whitewash) the size of a hen's egg; a piece of blotting-paper six inches square; a wide-mouthed bottle that will hold a pint; a quart pitcher two-thirds full of water; if the school-room is not warmed with a wood-fire, a dozen little bits of charcoal; a piece of candle three or four inches long; a kerosene lamp; a quart fruit-jar;

four table spoon fuls of soda or saleratus; a tea-cup full of vinegar; a couple of slender, pine-wood splinters; three table-spoonsful of sugar; two tumblers filled with water.

In order to follow the directions readily, number the tobacco-pipes, one, two, three, four. Soften the corks by gently rolling them under the foot on the floor. Fit to the half-pint bottle, and to pipes one, two, and three, each a cork. Remove the cork from the bottle, and with the round file carefully bore and file through it, at one side of its center, a hole through which the stem of pipe number one may be pushed far enough to allow its small end to come within one-fourth of an inch of the bottom of the half-pint bottle, when the cork is again fitted to its neck. The pipestem must fit the hole so as to be perfectly air-tight. Bore and file a second hole through the cork and fit into it pipe two, exactly like one, except that its bowl should face in the opposite direction. Break from the stem of pipe two, a piece that will leave only one-fourth of an inch of the stem projecting through the cork. Tightly fit the piece of stem into a hole bored through the cork that is fitted to the bowl of pipe two. Break pipe three so that it shall have a stem only one inch long, and fit this short-stemmed pipe to a hole bored through the cork that has been fitted to the bowl of pipe one, and remove the cork that has been fitted to the bowl of pipe three. With the corks each fitted to its place, the bottle may be made to stand upon the table, while the bowl of pipe three may be turned up so as to hold any object, as when in ordinary use. To find whether the corks and stems fit air tight, press the soft part of the right hand down upon the bowl of pipe number three, apply the mouth to the stem which projects from pipe two, and attempt to force air through the apparatus. If there is a leak, the hissing of escaping air will be heard. To find where the leak is, plunge the apparatus under water and blow, the hand still pressing upon the bowl of the pipe three. The leak may be stopped with putty or dough.

Into the pitcher containing the water, drop the lump of quick-lime, and allow it to remain there for half an hour, or more, stirring it up once or twice with a stick. Fold the sheet of blotting-paper across its middle and, without unfolding, fold it again at right angles, *i. e.*, so as to bring the four corners together. Press three of the corners between the thumb and finger of the right hand, and with the left push the remaining corner aside. A little conical pocket will be obtained, which may be set into the mouth of a pint bottle, and into it may be poured, a little at a time, the well-stirred mixture of lime and water. If care is taken; the liquid will drop through clear, and a pint or more of lime-water will be obtained. The whole process of making and filtering should be done in the presence of the class. The process may occupy a forenoon, with now and then a moment's attention. Let one of the boys have the care of it while filtering.

EXPERIMENTS.

Arrange the class, and hold the apparatus, so that all may see what you do and what happens. Lift the cork from the little bottle to which the pipes have been fitted. Pour into it clear lime-water to the depth of an inch ; replace the cork, apply the mouth to the pipe-stem fitted to pipe number two, and then draw as if to exhaust the air from the bottle. Ask pupil number one what he sees. "Bubbles," he will reply. Ask number two the cause. "You blew through the pipe-stem." Pass the apparatus around and let each one try it. Some one will be likely to find that it is not done by blowing, but by sucking, or drawing. Ask number three what the bubbles that he sees in the water are filled with. He will be likely to say "Air," though you may be obliged to close the bowl of pipe number three with the hand while you draw, to prevent the air which cause the bubbles entering. A few simple questions will lead the pupils to see that the experiment consists in drawing air through lime-water. Now ask if the air, in passing through, has changed the color of the lime-water. No change, or at least very little, will be observed. Obtain from the class, by means of suitable questions, the following statement: "Air passing through lime-water does not color it." If the class read script, write this statement upon the blackboard.

Into the bowl of pipe number three put some small pieces of glowing charcoal taken from the stove, or set on fire with the flame of a candle, *i. e.*, held in a candle-flame a moment by means of a pin. Apply the mouth again, and draw. The lime-water will be turned milky. A few questions will develop the statement: "Air from off burning charcoal will turn lime-water milky;" which should be written upon the board.

Throw the milky lime-water away, and pour into the little bottle a fresh supply of clear lime-water. Turn the bowl of pipe number three, mouth down, and bring directly under it the flame of the lighted candle. Complete the following experiment as before, and the statement may be obtained: "Air from a burning candle colors lime-water."

Repeat, with the bowl of pipe number three held over the chimney of a kerosene lamp, or over a gas-flame, and a similar statement will follow.

Now let the pupils compare the statements, and they will find that air from off burning charcoal, a candle, or a lamp, is different from the common air that we breathe or take into our lungs.

Into the little bottle put some fresh lime-water, and instead of the cork and pipe apparatus, thrust into the water one end of the stem of pipe number four, which you now break off close to the bowl. Apply the mouth to the other end of the stem, and blow a long breath through the lime-water. Pass the apparatus around, and let each pupil do the same. The lime-water will be colored. A few questions will lead the pupils to compare, and conclude that: "The air which we breathe out is not like the air which we breathe in, but is like that which comes from burning charcoal. or a lamp or candle."

Into the quart fruit-jar plunge a splinter of wood lighted at one end. It will continue to burn as in the open air. Remove the splinter, put into the jar the soda or saleratus, upon which pour the vinegar. Cover the top of the jar with a bit of pasteboard or a broad card. To the bowl of pipe number three, fit its cork, through which a hole is bored, into which the stem of pipe four is fitted Push the card aside which covers the mouth of the fruit-jar, insert the long pipe-stem as deeply as possible into the jar and draw with the mouth as before. The lime-water will again be colored. The statement may then be obtained from the pupils, that the jar contains air (or a gas) like that which comes from burning charcoal, etc. Into the jar plunge the second splinter, kindled at one end. The flame will be extinguished. Then the following statement, which like the others should be written upon the board: "The air (or gas) which is like the breath, etc., will put out the flame of a splinter or candle."

The teacher may now make the following statement: "Any air, except wind, which will put out the flame of a splinter or candle will cause sickness or death if it is breathed. If the teacher prefers, she may experiment with a mouse, by suspending one in the gas.

Now refer to the school-room, and the times when the air in it seems close, stifling, or *bad*, and to the dull feelings and dislike for study at such times as compared with the feelings when fresh air is let into the room. If the pupils wish to know why they are not made sick, perform the following experiments.

Pour into one of the tumblers of water nearly all the sugar which you have on your table. After tasting, the pupils will be able to say: "Sugar makes water sweet." Into the other tumbler put a few grains of sugar. "A little sugar does not make water taste sweet," will follow.

Returning to the question of the room, the pupils may be led to see that a little of the gas will not cause very serious results.

Refer now to the fact that death sometimes happens in wells, mines, and brewers' vats, and to the experiment of testing the air in such places with a lighted candle lowered in a pail. Also to the necessity of ventilating our rooms.

WHERE SHALL I PUT THE APOSTROPHE?

BY HARLAN H. BALLARD, LENOX, MASS.

Few things are so simple as the formation of the possessive case in English; yet pupils often make mistakes, by putting an apostrophe in the wrong place. Do you not consider your scholar somewhat exceptional who never writes of the "Ladie's Sewing Society," or of "oxens' hoofs"? There is no reason for confusion here, and a simple rule will apply in all cases both for the singular and plural.

Before this rule can be practically applied it is, of course, necessary that your pupil have a clear understanding of the force of the possessive case. He must understand the meaning of the word "possess" as clearly as that of the simpler word "own." He must understand that the possessive case is that form of a name which denotes that the person or thing named owns something. Observe that mistakes are seldom made regarding the addition of the letter *s*. At least nine out of ten errors are merely in the position of the apostrophe.

My rule, then, shall be confined to that one point, and for that will be found invariably true. It is this: *Put an apostrophe after the name of the owner or owners* Let us test this by a few examples. Suppose your pupil has written "oxens hoofs," and hesitates whether to put the apostrophe after the *n* or the *s*. You will properly ask him to complete the following sentence: "The hoofs belong to the ——— " When he replies, as he must, "oxen," tell him, "Then put your apostrophe after the word oxen." If he is slow and does not catch the thought, you will put your hand over *'s* and show him that what is left in sight, "oxen," names the animals that own the hoofs.

Notice in the following examples, which usually come under three or four separate rules, that in all cases the position of the apostrophe is determined as above, at a glance:

Men's shoes.
Man's head.
Charley Ross's father.
{ Charles's hat; or (as some prefer),
{ Charles' hat.

Fairies' homes.
A Fairy's home.
Deer's horns.
Mice's teeth.

In absolutely every instance the position of the apostrophe is thus decided. Now, this point settled, and settled *by itself*, if you wish a rule for the added *s*,—though a rule is hardly necessary,—I offer one which holds good in every case. *Add* s *to all singular possessives, and to all plural possessives which do not already end in* s. I am aware that the rules, as they appear in our grammars, are scientific and accurate. I know that I have given no reference here to Anglo Saxon case endings, etc.; but I am confident that to accomplish the desirable end of teaching little children to write correctly, this simple rule is good.

WRITING-LESSONS FOR LITTLE FOLKS

BY LYMAN D. SMITH.

VII.

FIVE MINUTES' TALK ABOUT THE LETTER.

"Look at the very first letter in your copy-books, little ones, just as you would look at a picture. Tell me its name." A chorus of "*i*" is the quick response. These children have been writing on their slates, and are familiar with the letters. "How many of you know just how small *i* looks?" The hands are all up. "Now close your books." I next write the letter in large size on the blackboard. "I want you all now to look very sharp at this letter *i*, and tell me what you see in the picture of it. What do you see, Robbie?" "I see the dot." "And you, Alice?" "I see a point at top." "And you, Carrie?" "I see a point at bottom." "Oh, no! There is a short turn at bottom. See: I can make a small *o* in the turn. What have you found, Harry?" "Three crooked lines." "Some of the lines bend like a bow, but none of them are crooked." I then draw to the left of *i* a straight line on main slant. "Children, if this line stood up like this pencil, you would say it was straight. But it only leans over just as the pencil does now. Is the pencil still straight?" "Oh, yes!" "Is the line still straight when it leans over?" They see that the line, too, is straight. "Now can you find a straight line in *i?*" The hands are coming up rapidly. "Is this one straight?" pointing to the last line. A murmur of "No." ' Is this one, then?" pointing to the last line. The little ones dissent. "Is this the right one?" pointing to the middle line. The class agree that this is a straight line. I next make a curve on connecting slant at right of *i*. "This line is not straight, like the pencil, but bends like a bow. We call a line that bends, a curve. Some curves bend toward the right hand, and some toward the left hand. Which way does this curve bend? To the right, or to the left?" All answer, "To the right." "Then it is the right curve. Now you may raise just as many fingers, as you can find right curves in *i*." The fingers come up in pairs all over the room. "I see that you have bright eyes to look at the letter; now I want to see if you have nimble fingers to write the letter.

CONCERT DRILL IN MOVEMENT.

"Open your books! Children, I want you to make believe that you are writing the letters, but do not let the point of the pencil touch the paper. Hold your pencils lightly, and move them over the lines just as though you were making the letters. Count for each stroke of *i*,—

one, two, one, dot. Slide your hand right along from box to box, and make believe that you write the first three letters. Count with me! What letter is this in the fourth box?" A chorus of "*u*." "Make believe write it, and count with me for each stroke,—one, two, three, four, one. You move your hand just as you do when you write *i*, only you repeat the motion. How many can slide the hand on the finger-nails, as they move the pencil over the letters? Swing the arm from the elbow, and do not let the wrist touch the desk. Read the letters in the next box" "*ui*," in concert. "Make believe write these, and count with me,— one, two, three, four, one, two, one, dot. Second line! Move your hands without touching the letters. Count with me for each stroke. Third line! Move your hands, and count." A vertical line marks off half-page lessons.

TRACING.

Begin now with the first line below the copy and trace right over the blue letters with the point of the pencil. Trace lightly and count as you write. Stop at the middle of the page. The teacher counts with them, and moves round among them, lifting up little forms that are stooping over the desks, raising little hands that have fallen over to the right, and correcting errors in position, pen holding, and movement. The teacher also gives the signal for writing each half-line. A few lines for independent effort are given below the tracing. The figure column may be written last. A minute's talk should be given on the figure previous to tracing it. Have the little folks count in a light, easy tone of voice The boxes can be numbered for each half line, and the number of each box called in its order as the children write.

A LITTLE ABOUT MINERALS.

BY H. L. CLAPP.

Teacher.—I promised you, when I told you something about granite, that to-day I would talk with you about *quartz*, of which you have brought me quite a number of specimens, as I requested. Here is a very pretty one, shaped like a six-sided lead-pencil, and of about the same size. Where did you get it, John?

John.—I knocked it out of a little hole in a big, white rock in the wall. It looks just like glass.

T.—So it does; but it is a little harder than glass, and will scratch the latter. You can always tell the difference in that way. This is a *quartz crystal*, and such crystals are very commonly found in little holes and cavities. In the northern part of Indiana, large, hollow stones are found, lined inside with beautiful quartz crystals. Often these stones, which are called *geodes* (pronounced *jee-odes*), are as large as a man's head. This crystal is quite a small one, but there is one in Dartmouth College, I believe, that is two feet long, eighteen inches through, and weighs one hundred and seventy-five pounds,— as much as a large man. I have read of one that weighed eight hundred pounds.

J.—On one side of the big, white rock were little bits of things that sparkled like everything in the sun. What were they?

T.—That was *drusy quartz*, which is made of the points of crystals placed very closely together. There is a clergyman in Blue Hill, Maine, who has hundreds, and perhaps thousands, of large and small specimens of drusy quartz of various colors, piled up along his garden-walks, making the garden look in the moonlight like some fairy kingdom, glittering with diamonds. Common specimens of drusy quartz are found everywhere among granite rocks. By *specimen* I mean simply a piece of a mineral or stone.

J.—What kind of a mineral was the big white rock?

T.—Probably, *milky quartz*; so called because it has the color of milk. How many boys have seen stones of that color? Most of you, I see.

Charles.—There are some on the edges of our carriage-drive to keep the carriages off the grass; and I saw a pile of them at the furnace. What are they used for?

T.—They form the beds of the furnaces, where scrap iron is puddled or purified, and melted into a solid mass. The intense furnace-heat cracks up larger pieces of quartz into small pieces very quickly, and then the small pieces are pounded down into a level bed. Well, John, you see your big, white rock is an interesting one to talk about. You will find most of the rocks quite as interesting when you become well acquainted with them.

James.—Is quartz always white?

T.—By no means. Sometimes it is pink, and then it is called *rose-quartz*; sometimes it is smoky brown, when it is called *smoky-quartz*; but more commonly it has various shades of red, yellow, and brown, caused by iron, and then it is called *ferruginous quartz*. Instead of using this hard name, you may say *iron quartz*. There is also a purple quartz used for the stones of rings. Who has seen such stones? Yes, a dozen of you.

William.—My sister has one in a ring, and she says it is an *amethyst*.

T.—And she is right, since amethyst is only purple quartz, of which beautiful specimens are found about Lake Superior and Nova Scotia.

A specimen of such beauty was once found in Nova Scotia that it was set in the crown of King Henry of France. Well, Robert?

Robert.—What is the red cuff-button I brought, made of?

T.—That is quartz, too; and that kind is very abundant in Minnesota.

R.—My brother said it was *carnelian.*

T.—Yes; that is the common name for the red, striped quartz. Probably most of you play marbles. How many know what an *agate* is? Ah, every hand comes up! Well, agates are made of banded quartz. Another kind of agate called *moss agate* is used for cuff-buttons, shirt-studs, &c. Probably some of you have picked up red stones on the beach. Well, those red stones are principally quartz, and are called *jasper.* They are abundant along the coast of Massachusetts Bay, especially about Saugus and Marblehead. Another kind of quartz is *onyx,* which is used extensively in jewelry. The colors usually are black and white, or brown and white, arranged in layers. The white part is cut into figures or heads upon the colored part, and then the stones are called *cameos,* which are used for rings, breast-pins, etc. Large and beautiful specimens are found in Mexico. Well, Charles, did you think the specimen you brought was quartz?

Charles.—Yes, sir. You said quartz looked like glass, and I did not know that quartz would scratch glass, or I might have tried it.

T.—In taking this glass for quartz you were very near the truth, as quartz is the principal material in glass. Quartz of a smoky-gray color, called *flint,* is used in making porcelain as well as glass. The flint is heated red-hot and thrown into water, when it becomes white; then it is reduced to powder and is ready for use. Glass is also made of soda, potash, and sand melted together,—fine, white sand being used for nice glass, and coarse and more impure sand for bottle-glass. *Sand* is quartz in little grains, like those of sugar. The plaster used for the walls and ceilings of houses is made of lime, a little hair and a large proportion of sand. Many people in the country scour their floors with sand. Nearly the whole of Cape Cod for forty miles is composed of sand; and somebody has said that there is sand enough there to scour all creation. It is so very clean that children dressed in white clothes can roll in it without soiling their clothing at all. In the desert of Sahara, in Africa, sand covers a space three thousand miles long; in Asia there is almost as much; and there is all we need in America, especially on our beaches. So you see there is plenty of quartz everywhere, and I have not told you all its forms and colors yet. Now I will write on the board the names of the different kinds of quartz, and I wish you to bring me as many of them as you can, and we will have them on exhibiton and talk about them at our next lesson.

KINDS OF QUARTZ.

Quartz-crystal, — glassy, clear.
Drusy quartz, — sparkling.
Milky-quartz, — milk-white.
Rose-quartz, — pink.
Smoky-quartz, — smoky-brown.
Iron-quartz, — reddish or yellow.
Amethyst, — purple.
Carnelian, — red, striped.
Agate, — banded.
Moss-agate, — mosses.
Jasper, — brick-red.
Onyx, — black and white.
Flint, — smoky-gray.
Sand, — in grains.
Geodes, — hollow.

USES OF QUARTS.

Sand-paper.
Ring-stones.
Cameos.
Porcelain.
Earring-stones.
Seals.
Glass.
Cuff-buttons.
Moulding.
Plaster.
Shirt-studs.
Scouring.

NOTE.—The *kinds of quartz* might occupy several lessons, and the *uses of quartz* might be considered at the same time. There is scarcely a country neighborhood in which "pretty stones," — which are generally quartz, — may not be found laid up as curiosities; and as for jewelry, people are only too glad to exhibit it.

FIRST STEPS IN NUMBERS.

BY W. W. SWETT.

IV.

XVIII. Let the first pupil in the class repeat the first odd number, 1; the next skip an odd number and repeat 5, the next 9, etc. When one gives a wrong answer, let him be seated. Continue until but one pupil remains. At another time begin with 2, then 3, and at last 4. Each pupil should understand that he is adding four.

Let any small object be counted by 4's. It is necessary that the abstract counting should precede the concrete. It does so, in fact, in all counting,

Tickets from 6 and 4 to 9 and 4 may be added to those in use.

The preceding work, beginning with XVII, should be so thoroughly done that the child can readily answer such questions as 26 and 4, 37 and 4, 49 and 4. One child may think of the skipping referred to above, and another may associate the result with the columns of the square. After 6 comes 10; so after 26 comes 30. The teacher may suggest either idea when help is needed, or at the beginning of an exercise to refresh the memory. Sometimes it is well to ask a pupil how he obtains an answer.

XIX. Give such examples for slate work as :

$$\begin{array}{ccccccccc} 7 & 9 & 6 & 3 & 5 & 4 & 8 & 9 & 2 \\ 7 & 9 & 6 & 3 & 5 & 4 & 8 & 9 & 2 \\ 4 & 4 & 4 & 4 & 4 & 4 & 4 & 4 & 4 \\ \hline \end{array}$$

not requiring more than 2 to be carried. Care should be taken that at no stage the work degenerates into counting.

XX. Question as in XIII., using oranges at 4 cents each, observing the directions there given.

Let each repeat 4, 8, 12, 16, to 40.

Now, 2 x 4, 4 x 4, 5 x 4, and 10 x 4 are easy to remember, and 3 x 4 requires only a little effort. 6 x 4 is just twice as much as this last. Some boys can easily remember that 32 is twice 16, and then that 8 times 4 is 32, just twice as much as 4 x 4. That leaves only 7 x 4, and 9 x 4. But any one can be recalled by running along the numbers just repeated, and thinking how many times 4 each one is. If a teacher will help her class take some such view of the field as that, her work may be made easy and pleasant.

XXI. Complete the 5's (see XIV,). The following helps may be suggested. 2 x 5, 4 x 5, 5 x 5, 10 x 5 are all easy. No one will have any trouble with 3 x 5, for it comes between 10 and 20 4 x 5 comes one side of 25, and 6 x 5 the other. Then again, you can remember 6 x 5 because it is 3 x 10, and 8 x 5 because it is 4 x 10. That leaves 7 x 5 and 9 x 5 as hard ones.

Make tickets for 4's and 5's in multiplication, and use only with the 2's and 10's leaving the addition ticket for separate use.

XXII. Subtraction is only counting backward, but it should not yet be used except in connection with the idea of objects, and that only to a limited extent.

Ask such questions as: "If a boy has a dollar and spends 10 cents, what has he left?" It will be well to do this after an exercise in counting by 10's. (See II) Continue the questions, and then let the same series be counted backwards.

Use the 5's in the same manner. Proceed slowly and carefully, giving the child ample time to comprehend fully the new ground.

Use the 2's, first reminding the class that, as in counting forward by 2's they simply named the odd or even numbers in regular order, so now they will name them in reverse order.

The 4's may follow with a similar reminder, but nothing need be said about substracting, nor should the form 10 from 100, 10 from 90, be used.

LESSONS IN TONIC SOL-FA.

BY T. F. SEWARD.

I.

[There has long been a feeling among educators that music should be taught, like other subjects, by the regular school-teacher. The difficulties of the staff notation make this ordinarily impossible. Tonic Sol-fa, which is simply a ***natural method*** of studying music, affords an opportunity for the full realization of that idea. Many teachers have taken it up, in schools throughout the country, without a word of oral instruction. This series of lessons is given in the PRIMARY TEACHER as a help to many who desire to use the system. One of the greatest advantages of the system is that it can be taught by those who are not specially musical. Any one who can sing the scale correctly is prepared to begin. No one who has that small amount of musical ability need to have the slightest hesitation in undertaking it. The maxim, "We learn to do by doing," has never had a more beautiful illustration than in this system. The pleasure of the pupils, and their rapid progress, will be a perpetual inspiration to the teacher.

I have tried to plan these lessons without referring to any other book, but the limited space in this magazine renders it impossible.*]

LESSON.

After calling attention to the difference between an ordinary sound or *noise* and a *musical* sound or *tone*, let the teacher sing a tone at any convenient pitch to the syllable DOH, calling upon the pupils to imitate.

When the voices are tolerably well united, teacher sing the tone a fifth higher, to the syllable SOH, the pupils again imitating.

Teacher.—How many tones have we sung? What is the name of the first tone? Of the second?

Tea.—Any tone we hear may be taken as DOH. I will sing another DOH, and see if you can find the SOH which belongs to it. (Teacher sings DOH at a different pitch. The pupils may fail in getting the SOH, in which case they should be helped.)

Tea.—I will write these names on the board, and you may
SOH sing them as I point. (Teacher places them as in the side
column, and exercises the class by pointing for a few minutes,
changing the pitch several times.

Tea.—I will give you other signs from which you can sing the
DOH tones. (Shows the hand-signs as given on page vi., preface of
"Music Reader,"† and exercises the class.)

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* It will be observed that the Tonic Sol-faists have adopted, the sensible plan of giving the English sounds to the letters, in spelling the syllables.

† The teacher who begins this course of lessons will need "The Tonic Sol-Fa Music Reader." Messrs. Biglow & Main, publishers, New York. Price, 35 cents.

Teacher erases the last two letters of the DOH, and says: "When I point to this D, what do I wish you to sing?" Ditto the SOH.

Tea.—We will take these letters as a means of writing music, and I will write an exercise for you to sing. (Teacher writes something like the following):

D D S S D S D

After singing this, and one or two similar exercises, teacher says: "You may listen to me. I will sing the tones to the syllable LAH, and you may name them as you hear them."

After a brief exercise in this way, Teacher says: "If you hear a tone which is not either DOH or SOH, you may call it *new tone.*" The tone ME* is thus introduced and named. By singing the tone several times in connection with DOH and SOH, the pupils are led to observe that it comes between those two tones. Teacher writes it there, as in the side column, and exercises the class. He also shows the hand-sign for ME, and again exercises the class. not forgetting to change the pitch occasionally.

SOH

ME

DOH

A brief review will now be in place. How many tones have we? What are their names? Where is ME, as related to DOH and SOH? Show me the hand-sign for DOH; for ME; for SOH. Name the tones as you hear them. (This "ear-exercise" is very important. It is the beginning of a process of training which is to be continued as long as music is a study. In exercising the class, the Teacher must be careful to give a clear impression of the new key by singing the chord thus:

D M S M D

It will be necessary at first to always begin with DOH, in order to give the pupils confidence. Many cannot name the tones, who have no difficulty in singing them. In this exercise, as in the singing, the pitch should be frequently changed.)

Tea.—We will now sing some tunes from the blackboard. (Writes the following):

D M S M S M D
D S M S M S D

On page 3, "Music Reader," will be found as great a variety of exercises as may be needed in the practice of the three tones.

I have said nothing in this lesson about the "mental effects" or "characters" of the tones. The subject is fully treated on page 2 of the "Reader," and does not need to be repeated here. Do not fail to present this novel and beautiful study of tones. You will be surprised to see how readily the pupils will distinguish and name the *strong* tone the *bright* tone, and the *calm* and *peaceful* tone.

LESSONS IN DRAWING.

BY MARY D. HICKS.

I.

DRAWING SHOULD BE THE EXPRESSION OF THOUGHT.

It is not intended in this series of lessons to give a complete primary course in drawing, but simply to speak of the different features which should be introduced into primary work in drawing, and to give sketches of lessons in each feature.

The instruction in drawing, in our schools, should be broad enough, varied enough, and constant enough to insure to all pupils the same readiness in drawing, both in execution and in application, that they now obtain in writing. Drawing is too often considered mainly as a matter of execution; the production of a good-looking drawing to preserve, is thought to be the main thing. This is all wrong. In writing, we acknowledge without question, that the development of the faculties by the use of written language, and the development of the ability to express ideas in writing, are the main things, and that penmanship is secondary. So, in drawing, the development of the faculties by the aid of drawing, and the development of the ability to express ideas by drawing, are the main things; the execution is secondary.

The aim, then, of primary instruction in drawing should be to enable the children to perceive and conceive form, and to express readily their perceptions and conceptions of form by drawing. In order to do this, they should have sufficient practice in drawing to enable them to use the pencil and blackboard crayon naturally, and with facility; but the development of a remarkable degree of execution should not be expected nor attempted.

Perceptions and conceptions must be developed before they can be expressed. The means taken to develop perceptions and conceptions of form, and to enable the children to express them, must be various; for all primary instruction, to be efficient, should be varied in manner.

Lessons from the solids should be given in order to develop the perception of form, which is to be expressed later by drawing.

Exercises in moulding solids and objects in clay should be given in order to develop by a different means the perception of form.

Drawing from the blackboard should be given for practice in reducing figures, thus developing ideas of proportion as well as of form.

Drawing from memory should be given to develop and fix conceptions of form.

Drawing from dictation should be given to recall to the minds of the children, by words, their conceptions of form, and to give them practice in expressing their conceptions by drawing.

Drawing from objects should be given to lead the children to perceive the forms of things about them, and to enable them to express those perceptions in drawing.

Busy work in form should be given, that the children may become accustomed to rely upon themselves in expressing their ideas of form.

Drill in execution should be given as an exercise to promote ready execution.

Original arrangement should be given to cultivate the imagination while developing perception and conception of form.

Enlargement from cards should be given, when children have reached their second school-year, as a means (like reductions from the blackboard) of developing ideas of proportion as well as of form.

In succeeding articles, sketches of lessons will be given in each of these various ways of developing the faculties through form, and promoting ready drawing as a means of expression.

A few words now, as to the arrangement of these various lessons in the school period of two primary years. For the first few weeks in school, more attention should be given to the lessons in form, from the solids, than to drawing. After a few weeks, the children having been led to observe, and having received some ideas about form, more time may be given to drawing; but the exercises in drawing should be led in point of arrangement, by a lesson from the solid; for instance, if parallel lines are to be taught, the idea of parallel lines should be developed by a lesson from the solid before an exercise is given in drawing parallel lines from the blackboard.

During the first year all copying should be from figures drawn on the blackboard. During the second year, enlargement from cards should be introduced.

After the first few weeks devoted to the solids, all the other various exercises mentioned above should be introduced each week. The lessons of each week should be based on some line, figure, or term which it is desirable to teach, as for instance, vertical line, circle, union of lines. The first lesson of the week should be from the solid or object. The order of the other daily lessons may be as follows: reduction from the blackboard, drawing from memory, drawing from dictation, drawing from the object. There will be, of course, time for busy work every day. The drill and time exercises can be given just at the close of any lesson in drawing. Original arrangement can be given as busy work, or may be sometimes substituted for a memory or dictation lesson. Enlargement from cards can be given in the second year, in the place of reduction from the blackboard.

Great pains should be taken to prevent the work in drawing from being mechanical. The aim should be to direct the lessons so that the drawing shall always be the expression of thought. If this is done, the children's faces will brighten when the time for drawing comes, and all will be eager to begin work; the exercise will never be wearisome, but will be interesting and stimulating. The children will lose all awkwardness in handling the pencil and blackboard crayon, and drawing will soon become to them, as it should, an easy and rapid means of expressing their thoughts.

In the next article, sketches of lessons from solids will be given.

THE NORTHERN VOYAGES.

BY MRS. LOUISA P. HOPKINS.

Once on a time, from Upernavik,
We sailed the sea to Reikiavik;
It was a chilly time.
The icebergs crowded round the vessel;
The winds and waves did toss and wrestle;
In that wild, frigid, clime.

We left the walrus on the ice-blocks;
We met the flying geese in nice flocks;
The polar bears sailed by.
The aurora-borealis streaming,
The midnight sun above us beaming
Illumined the arctic sky.

Our frosty food in stove and kettle
Refused to melt; the oars we whittle
To make the fire bright.
We burn the blubber and the whalebones,
We try to drink the snow and hailstones,—
Oh, what a sorry plight!

At length we reach the boiling geyser:
It makes our tea and coffee nicer;
Our eggs we cook in steam.
Mt. Hekla's red-hot stones are flying,
The reindeer with the herd are crying
Their tears run down, a stream.

We hear the petrels screaming seaward,
We turn our happy faces leeward,
And take a tinkling sledge
To reach our homeward destination
After this cold investigation
To the pole's farthest edge.

The bells at Kyrkedal are chiming,
The donkeys up the roofs are climbing,
The sheep are in the fold;
The boys at work, the girls a-knitting,
The women at the fireside sitting,
All safe from storm and cold.

We'll stay at home awhile in Iceland,
No other land is such a nice land;
So true and good and free;
And in the councils of the sages
We'll smoke contented through the ages,
Nor sail the frozen sea.

EDITORIAL.

The demands made to-day upon the primary teachers are many and varied and require that they should consider the work exacted of them from many standpoints. They must be not only well-informed in regard to their duties, but they must also be industrious, earnest, and enthusiastic in their discharge. They must read, study, and plan from day to day, to become familiar with the best methods of teaching and management. To neglect to know what other teachers are doing, and fail to practice upon the results of their observation and study, will make their daily work dry, stale, and repulsive to the active mind of their pupils. New ideas, discreetly applied, will act as leaven in their schools, and develop an enthusiasm which will diminish their burdens. The exercise of tact in management will secure the order, and harmony essential to success. Many a teacher well furnished, intellectually, for their work, becomes discouraged and weary of the profession simply because they are not inspired by a faithful study of the claims it has upon them.

The tendency to fall into routine, and a merely formal style of teaching, comes from a neglect to take common sense as their guide. Such teachers *under-rate* their business, generally *over-estimate* themselves, and think their pupils are in fault, and belittle the profession by their connection with it.

With the opening of the New Year, we would urge every primary teacher to study the art of teaching; exercise their best tact in management, and then 1882 will be to them the *best year* of their professional life. They will find in it the stimulus that will make their study and work a delight. The good of their pupils will kindle their ambition and lead them to see that the profession is as high and noble in character as they themselves raise and make it. There is truth in the saying of Ruffini: "The teacher is like a candle, which lights others in consuming itself."

The most reasonable objection that can be made against a system of thoroughly graded schools is, that in grouping pupils of similar attainments into large classes, the *individuality* of pupils is not sufficiently recognized. There is danger of the teacher's overlooking the importance of reaching the mind, heart, and will of *each* scholar in a large class; of relying too much upon the general machinery of class work. In primary work, reliance upon the class system, entirely, is fatal to good results. The teacher must go down to the level of each pupil, and draw out the powers, test their capacity for observation and comprehension.

This individual work cannot be well done in classes of the size of those usually found in the graded schools of our cities and towns. Our purpose in calling attention to this important matter is not to find fault with the work of the teachers in the graded schools, but to urge them to make known to the school officers, and to the community, the importance of having the classification such as to enable them to study the characteristics and needs of each pupil. It is a false economy to run the elementary schools on the plan of great machine-shop, or manufacturing establishment, where the products are turned out in great quantities, and of a uniform pattern.

Education means the drawing-out and training of the faculties of the children, with reference to their individual powers and adaptations for usefulness, as component parts of the body politic of which they are soon to become factors. Children differ as widely in their mental organization as they do in their physical, and this fact must be recognized in their education. And yet, we do not believe that the best possible results are secured by following the strictly "*individual plan*" of instruction. We hold firmly to the "class system" and to the importance of having the schools graded; we only demand that the limit as to numbers shall be such as will enable the teacher to *study the individual needs* of pupils. It is unquestionably true that pupils learn more by reciting in classes than they would singly. The difficulty is that the class must be arranged to meet the wants and condition of the average pupil, which is liable to hold the bright and forward child back until the dull and indolent one can be brought up to a given standard. Some plan of individual promotion should be devised to obviate this difficulty. Instead of classes of fifty pupils, arranged for recitation in two divisions, we would suggest that classes be organized on a basis of twenty-five or thirty pupils. Such a classification would give opportunity for a more close and careful study of the wants of individual pupils.

We have been requested to state the rights of teachers, under the law, to inflict corporal punishment upon disobedient pupils in the schools. The well-settled doctrine of the law places the teachers *in loco parentis*, so far as necessary, in the government of pupils,—that is, such a *portion* of the powers of the parent is committed to the teacher's charge as may be necessary to answer the purposes for which he is employed. An eminent English commentator says: "This power must be *temperately* exercised, and no teacher should feel at liberty to administer chastisement co-extensive with the parent." The American common law doctrine admits only the right "of inflicting *moderate* correction, under the exercise of a sound discretion."

Several decisions are on record by the courts, but the authority which is perhaps most relied upon, and oftenest referred to, on the subject of corporal punishment in schools, is the case of the Commonwealth *vs.* Alonzo D. Randall; 4 Gray, 36 Mass. Reports; 1855. The jury below was charged by the Court: "That a teacher had a right to inflict corporal punishment upon a scholar; . . . that in inflicting corporal punishment a teacher must exercise reasonable judgment and discretion, and must be governed as to the mode and severity of the punishment by the nature of the offense, by the age, size, and apparent powers of endurance of the pupil." The charge having been excepted to, was approved by the Supreme Court, and the Court there said: "If, in inflicting punishment upon the pupil, the teacher went beyond the limit of moderate castigation, and, either in mode or degree of correction, was guilty of any unreasonable and disproportionate violence or force, he was clearly liable for such excess in a criminal prosecution."

In Lander *vs.* Seaver, 32 v., 114 (1859), the same doctrine is held: "A schoolmaster has the right to inflict reasonable corporal punishment. He must exercise reasonable judgment and discretion in determining when to punish and to what extent."

Judge Warren Higley, of the Police Court, Cincinnati, in a recent case where the teacher was brought into court for punishing a lad eleven years of age, said, that "by the common law doctrine, no doubt prevails, and the teacher has the legal right to inflict reasonable corporal punishment in the government of his school. But the necessity for the exercise of this right is seriously questioned by many of the most eminent educators of to-day. For more than ten years past the Public Schools of Syracuse, N. Y., have been governed without the use of corporal punishment. In New York City teachers are not permitted to employ corporal punishment in the government of their schools. In many other cities and towns the use of the rod is banished from the school-room by the local authorities, and the most of our large private schools are governed without the employment of physical force. In general, I think it can be safely asserted that the *best government* in schools and families is that which results from means other than corporal punishment. This seems to be the *tendency* of the *moral sense* of communities upon this subject."

"The law is, then, that corporal punishment in schools must be reasonable and proper in view of all the circumstances, and each case must be decided according to the facts.

"I know of no better test to be applied than this: Whenever the punishment inflicted upon a child by teacher or parent is such as to shock the *moral sense* of the dispassionate and reasonable, it is illegal.

"This *moral sense* has varied among different peoples and in different ages. Its standard has advanced with civilization. It resides in and is a part of the family, and through the family finds expression in the community and in the laws of the land."

This is an era of practical work in the elementary schools. The training which the boys and girls of to-day are getting, is fitting them to *think* for themselves. Sensible methods are being introduced in teaching language, arithmetic, geography, penmanship, etc., which lead pupils to observe and develop principles for themselves. They are acquiring power to think, speak, and act independently. They are not using the teachers, or text books, as "props;" they are not "crammed" to surprise visitors by the rapidity and accuracy of their answers on "show days." The new work of the primary schools is working wonders. Good teachers! this is the result of your work. Go on!!

The editor of the *Indiana School Journal*, for December, forcibly states the importance of teaching honesty. He says:

"Moral character is the chief end of an education, and if that end is not reached, either directly or indirectly, the less education a child has the better it is for the community. All morality, and all religion that amounts to anything, must have a substratum of *integrity*. The teacher has no higher duty, and no more diffcult task, than to teach children to be honest. Teach them to take a pride in always telling the truth, in always keeping a promise, even if it cost a sacrifice to do it. Teachers, above all others should be an example in these regards, and one who is not has no business in the school-room."

Books for Primary Teachers.

(Continued from November Number.)

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Morals and Manners. Gow. $1.00. Van Antwerp, Bragg & Co.
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Lesson on Kindness to Animals.

LESSON VI.—THE HORSE.

(Continued.)

[To be read to pupils by Primary Teachers.]

In Russia people do not use blinders to cover the eyes of horses, and so they seldom get frightened. They know when to start, because they can see when the people have got into the carriages, and when they hear noises they can see the cause.

Blinders were invented by an English nobleman to hide a defect in the eyes of a valuable horse, and then they were found to be good places for the nobility to put on their coats-of-arms, and so they came into fashion. They injure the eyes of horses, and have caused thousands of accidents, because horses with blinders cannot see behind them. In America a great many people are beginning to train their horses to go in carriages without blinders,—just as they do in saddles without blinders,—and bye-and-bye I think they will be out of fashion, and horses, like all other animals, will be permitted to use their eyes.

It is a great cruelty to a horse to tie his head back with a tight check-rein, for he cannot breathe so freely, he cannot draw so much load, nor so easily. Many horses suffer great pain and become diseased because of their cruel check-reins. If a boy had to draw or push a heavy sled or wheelbarrow with a bit in his mouth fastened to his back, which pulled his head away back of his shoulders so that he could not lean forward, then he would know what a horse suffers with a tight check-rein. A check-rein, if used at all, should always be so long that when the horse draws a heavy load up a steep hill, he can put his head as far down as he would put it if he did not have a check-rein. Over five hundred horse-doctors in Great Britain have signed a paper condemning tight check-reins; and I think the time will come when all our men, women, and children will become so humane to horses that they will not make them suffer any longer with tight check-reins.

Some people, when their horses become old, or sick, or lame, sell them for a small sum to cruel men who beat them, and kick them, and starve them, and otherwise abuse them, and then the poor horses have a hard time until they die. I think that a good horse, that has worked faithfully for his master until he is worn out, never ought to be sold. When he has become too old or worn out to serve a good and merciful master, then he should be killed in a merciful way without pain. This can be done in one instant by shooting him *just in the middle of the top of the front of the head, pretty near the top of the forehead.* The "Massachusetts Society for Preventing Cruelty to Animals" publishes a little book that shows how horses and all other domestic animals may be killed in a merciful way, and the Society employs persons in Boston to kill them.

Five other things about the horse are worthy of being told, namely: (1st.) That the strongest part of the horse is just behind his shoulders, and the rider who leans forward in the saddle tires his horse less than one who leans back. (2d.) That when, because of old age, the teeth of horses do not properly chew the food, they can often be put in good condition by horse-doctors. (3d.) That it is just as cruel to keep a horse in his stable for days without exercise, fresh air, and sunshine, as it would be to keep a boy in the house several days without exercise, fresh air, and sunshine. Horses should have some exercise every day. (4th.) That horses like to have other horses or other animals in the stable with them, and perhaps feel almost as lonely without them as boys do when they have no companions. (5th.) It has been found by experiments in Great Britain that horses which work hard six days in the week will last much longer and do more work in a life-time, if permitted to rest every seventh day. And this reminds me that a friend of mine near Boston Mass., used to drive his horse six days of every week to the railroad station, and the seventh day, by a different road, to church. After a time the horse learned this, and of his own accord would take the road to the railway station six days in the week, and every seventh day the road to church.

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* *Lessons on Kindness to Animals.* By Geo. T. Angell, Esq., President of the Massachusetts Society for the Prevention of Cruelty to Animals.

Horses differ in intelligence, but they all know when they are kindly treated, and whether you speak kindly to them or not, and they all like to be kindly spoken to. I could tell you many true stories about the kindness of horses, but it would make this lesson too long. If you want to be kind to horses, always refuse to ride after a horse that is sick or lame, or that seems to be poorly fed and weak.

SOME QUESTIONS.

[Others to be added by teacher.]

In what country are blinders not used on horses?

Who invented them, and what for?

Why is it better to learn horses to go without blinders?

Why is it cruel to tie up a horse's head with a tight check-rein?

Could a boy push or pull a load well with a tight check-rein, and why not?

How long should a check-rein be, if used at all?

When a horse gets old, or sick, or lame, is it right to sell him to strangers?

How can he be killed in a merciful way?

Does a rider who leans forward in the saddle tire a horse more or less than one who leans back, and why?

When the teeth of old horses become bad, what can be done for them?

Should a horse be kept in a stable without exercise, fresh air, and sunshine? If not, why not?

Why do horses like to have other animals in stables with them?

What has been found in England in regard to horses that work hard six days in a week?

What can you tell about the horse in Massachusetts that used to go to the railway station week-days and to church Sundays?

Do horses know when they are kindly spoken to?

If you want to be kind to horses, what should you always refuse to do?

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THINGS TO BE REMEMBERED.

Remember that if you have undertaken to teach school, it will demand your most thoughtful attention. Unless you are much better qualified than the great majority of our first-class teachers, it will be necessary to make special preparation for each day's work. The teacher who would make a subject interesting to his classes, and induce them to study closely, must be familiar with all the minor details of that subject.

Remember that you cannot do good work unless your nerves are quiet and your digestion is good. You cannot be up till 2 or 3 o'clock and teach a respectable school. The average teacher must have from seven to nine hours' sleep.

Remember that it will be useless for you to attempt to impress lessons of moral obligation upon the minds of your boys and girls unless you yourself practice morality.

Remember that cleanliness is next to Godliness, and that in this the teacher should always be a model. Combs and brushes are cheap, and even clean linen is not an expensive luxury.

Remember that scholars have rights and feelings which even teachers are bound to respect. A thoughtless or harsh word on your part will be remembered by some of your little ones long after you have yourself forgotten it.

Remember that it is no special mark of superiority in a teacher to disregard the reasonable wishes and requests of parents. Airs of lofty superiority may usually be regarded as signs of weakness,.and they will always prove detrimental to the teacher's usefulness.—*Normal Monthly.*

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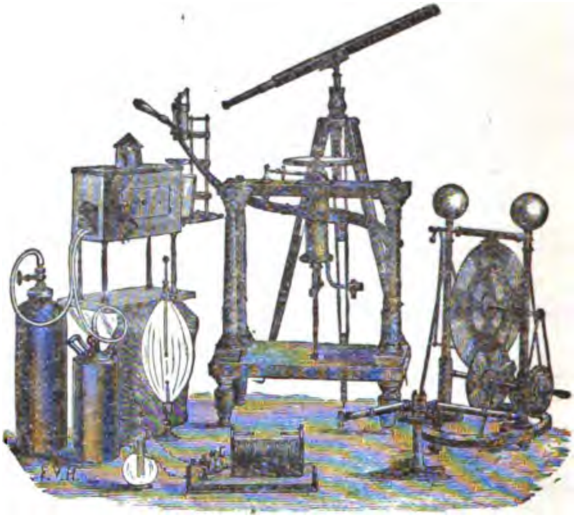

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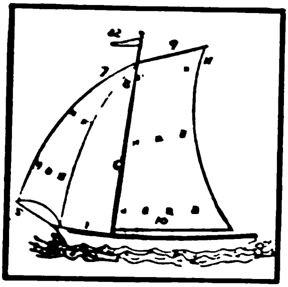

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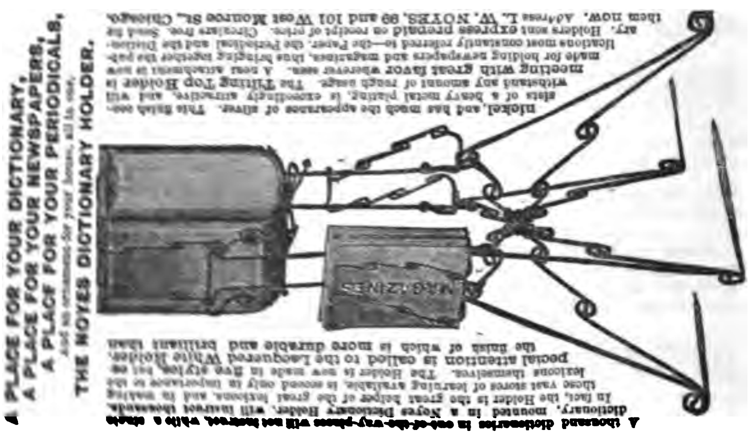

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THE
PRIMARY TEACHER.

VOL. V. FEBRUARY, 1882. NO. 6.

STYLE IN TEACHING.

BY THOMAS TASH, SUPT. OF SCHOOLS, PORTLAND, ME.

I.

The term *style* in our language is of very broad significance and application. We speak of style of writing, and of style of speaking; of style of painting and style of architecture; and style of dress, singing, dancing; even style of anything in which form or manner is, even in a slight degree, expressive of taste or sentiment. In writing, we have the style of Shakespeare, of Addison, and of Pope; of Irving, of Prescott, and of Longfellow. Indeed, I have heard a very intelligent reader of fiction say that he reads every new novel twice, — once for its story, and again for its style. In speaking, also, we have the style of a Brougham and the style of a Webster. In painting, the style of a Rembrandt and the style of a Landseer. The public edifices that we visit, and the homes that we dwell in, each present more or less the marks of some style of construction or of architecture; thus we have in buildings, the Grecian style, the Gothic style; and in their pillars and pilasters we have the Doric, Ionic, and Corinthian styles or orders of architecture; and of the furniture within these buildings, we say it is of the Louis XIV. style, the Eastlake style; whatever, in fine, pleases our senses, our fancy, or our taste, we say, possesses the elements of *style*. Is there anything in teaching to which this term may properly apply?

In once speaking to a body of teachers under my supervision, I related, to illustrate style in their work, an incident that occurred in my own early teaching, in a family in which I felt considerable interest. The oldest son, after attending the Academy several terms, left home for the Hub of New England, and found a place as clerk in one of the stores of that metropolis. His parents, to supplement his slender salary, regularly sent him articles of clothing made up by the clumsy tailor of the village. After several garments had been sent and received, the young man requested that the cloth might thereafter be sent to him and he would have it made up in the city. "Why?" asked his parents, in surprise, in their next letter. "Because," answered he, "the clothes made there have no *style.*" An acute observer, a member of the School Board, who was present when the story was first told, asks whether the youth had not become demoralized in the city. His after-career and his present responsible position, for a long time honorably held in my own city, justify me in answering "No." His taste in dress had been improved. He does not complain of the quality of the material, but in the "make-up" there is no fitness, no elegance, no *style.* It is not the work of a master's hand.

Having had, for many years, frequent occasions to enter various school-rooms, I am struck with a want of style in some of them,—a lack of style in the work done. Compared with schools not many rods distant,—perhaps under the same roof,—everything in a particular room seems slovenly, slack. I often feel I would like to take the material and have it worked-up by another hand, or place another hand in the slack teacher's place, so that there may be more of *style* in the work. Why, then, in teaching, is this quality so much to be desired in every human work? What conditions lead to it? What does it imply?

Style in teaching implies:

1. *Good Order.* This need not be the death-like quiet, but the quiet of busy workers, each intent upon his own proper work, attentive to the teacher's voice when meant for him, avoiding all waste of time on his own part, and all interruption of others. This order may be easily kept; apparently *it keeps* itself. A teacher always engaged in keeping order, rarely, or never, has good order.

2. *A proper seating or distribution of scholars in the school-room.* This is conducive to good order as well as to the good appearance of the school-room. When there are just as many single sittings in a school-room as there are pupils belonging to the school, the seating or distribution of the pupils is comparatively simple; but even then we should not trust to mere chance, or to their selection. We often find more seats in a school-room than scholars. When this is so, the teacher should give careful thought to the distribution of the pupils. I have often seen scholars so confusedly mixed, so grouped, that the teacher must have difficulty in keeping track of individuals. The appearance of such a school does not compare favorably with one properly seated. It presents no *style.*

In rooms with single sittings the ordinary methods of distribution in mixed schools are as follows: (1) the boys upon one side, the girls upon the other; (2) the boys in the front, the girls in the rear of the room. Special modes are (3), one row of desks from rear to front, containing boys, the next girls, and so on; or, (4), in first row first a boy, then a girl, then another boy and another girl, and so through the row; in the second row, first a girl, then a boy, and so on. Of the four mentioned plans, the first, third, and fourth allows seating the larger pupils in the part of the room most distant from the teacher's desk, where ordinarily the higher desks and chairs are placed. In some school-rooms, especially in rural schools, we often find as many double desks, or nearly as many, as there are pupils to occupy them. In such cases the double desks should do the duty of single ones, each containing only one scholar, and seated from rear to front, *one in a desk*, in the end of the desk at his own right,— the teacher's left. If there are a few more pupils than such double desks, use the same order, placing two in a desk, either in the rear or the front, as seems most convenient.

I should not enlarge on this matter of seating pupils did I not very often see them so badly seated as to impair the usefulness as well as the appearance of the schools; and on re-seating them the teachers have been surprised at the improved appearance and ease of management.

(To be continued.)

◆

THE SENSE OF HEARING.

BY MRS. LOUISA HOPKINS.

Teacher.—The ear is a strange-looking part of the head, somewhat like a little trumpet attached to the side of the head.

Carrie—It looks like a shell.

Teddy.—Does the opening go way into the head?

Teacher.—No; you would find something very soon which would stop the way; it would look like a little round white membrane, as it is, like the parchment of a drum stretched over the opening; it is delicate and thin, about so wide; it quivers or vibrates when sound strikes it, just like any stretched surface; it vibrates with the sound-waves of air, and that vibration is carried through it to four little bones which are in an open chamber behind it; they carry it on through a spiral passage very much like the windings of a snail-shell, until it reaches the nerves, which carry it to the brain; when the brain receives the impression, or knows of the vibration, *sound* is the result. Why do you think the external ear is shaped so curiously?

Ethel.—To get all the sound it can.

Teacher.—The vibrations of the air, which are waves of sound, are gathered up in the expanse of the outward ear and transmitted gradually through quite a tube without sudden shock to the delicate drum of the ear. This drum is so delicate as to repeat the vibrations very truly to the queer little bones which touch each other behind it, and the vibrations are carefully carried on, winding gently to the connections with the nerve which perceives it for the brain. Very nice care has been taken that we may hear. If you should see the whole machinery of the ear, you would wonder at the wise contrivance.

Fanny.—Why cannot Alice hear as well as we? Her ear is just as good.

Teacher.—Alice had scarlet-fever once, which destroyed the drum of the ear, as it often does, breaking it down by some very poisonous matter which was near it and which had no other way of escaping from her blood. It pierced this delicate little drum, and wore it away entirely in one ear, and nearly all in the other; yet the little bones are left, and the vibrations of the air reaches them through the bones of the face and head where it touches them. Alice can hear little when she opens her mouth.

Alice—I know I can; or if the piano is playing, I can hear better leaning upon it. Why?

Teacher.—The vibrations are carried through the mouth and by the teeth or by the arm to the bones of the face, or through tubes leading from the throat into the chamber of the ear where the four little bones are. The outer ear is a protection to all the nicer and interior parts of the organ of hearing. A waxy substance surrounds the tube of the outer ear to keep out anything which might otherwise touch the drum. We should never put anything hard or sharp beyond this, for fear of piercing the drum. Some sound-waves are so strong that they are perceived also by other parts of the body, as for instance the firing of a cannon or heavy thunder, making the whole air shake; but the ear is especially arranged,—made exactly so as to gather and carry the delicate vibrations of usual sound, which we could not otherwise know. Now let us attend to the sense of smell. What is its organ?

Answer.—The nose.

Teacher.—There is something which we call perfume; it would be hard to say what it is; sometimes it is agreeeble to us, and sometimes not. We cannot tell why, but it is very decided.

Hattie.—How queer it is! I am trying to think what perfume can be, but I am not able to explain it.

Teacher.—Now suppose a little flower, tube-rose or heliotrope is here. Why, it sends its perfume into every spot of the air in the room instantly. You perceive it at once and everywhere, and will as long as the flower lasts in the room. If I took the flower out of the room, should I take the perfume out, too?

Maggie.—No, you would leave what was already in the room still there.

Teacher.—Would it give less perfume in another room, then.

Daisy.—No'm ; just as much until it is withered.

Teacher.—Isn't it very strange? Something escapes from the flower as long as it lasts; without taking time to travel, without making the perfume of the room any less, it fills every part of a large space, telling us of the character of the flower. One little drop of attar of roses will send its odor through a bottle as tightly sealed as we can seal it, and pervade everything it reaches with such a strong scent that it seems almost impossible to destroy it. What a wonderful quality! It reaches our brain through little nerves spread out upon the inside of the nostril, and we have the sense of smell The sense of taste is almost as curious, but as it requires contact of the organ of taste, the tongue, with the substance which is tasted, it does not seem quite so impossible to understand. Look at each other's tongues. Look through this magnifying glass. How wonderful! A little forest! The surface of the tongue is covered with little feelers which almost seem alive, and the flavor of what we taste comes to these so as to be conducted by the nerves which runs from its surface to the brain. Thus we taste. The senses of taste and smell may both be injured or deadened by illness, or by abuse. They are intended to guide us in our choice of food and other things used by the body. They will guide us if they are in a healthy state, but we must not excite them too much, or train them to wrong uses. Can other animals use any of these senses better than we?

Willie.—Dogs can smell better. They can follow a man by his scent.

Prescott.—Setters can scent game, and show the hunters where to look.

Teacher.—Animals may have some senses we do not understand. These of which we speak are the human senses. Feeling is the perception by contact with any part of the body, for the nerves of touch come to the surface everywhere, but chiefly in the fingers, which can be made very keenly sensitive by practice, as in the case of the blind.

◆

— The parent who sends his son into the world uneducated, defrauds the community of a lawful citizen.—*Kent.*

— Object-lessons are meant to awaken the intelligence, and to cultivate the different phases of observation, conception, and taste, without which little progress can be made in education.—*Currie.*

MULTIPLICATION TABLE—HOW TO LEARN IT.

BY WM. M. GIFFIN, TRAINING SCHOOL, NEWARK, N. J.

A pupil should never be asked to memorize the multiplication table before he understands it, if for no other reason than that it will take him a much longer time to do so, and when done there has been only a *sickly* development of the mind, as but one of the faculties has been exercised; viz., the memory. *Reason*, that great faculty or capacity of the human mind by which man is distinguished from the inferior animals, remains unexercised, therefore undeveloped. Children should not only be trained to tell, but also to observe, to do, and to reason. Nothing should be done for them which they can, with a reasonable effort, do for themselves.

The number-table, the abacus, or objects of any kind can be used to build the tables, and where they cannot be had (and in fact, where they can be had), the following is an excellent slate exercise.

Draw on the board an oblong, numbering it as below,—0, 1, 2, 3, etc.

9	8	7	6	5	4	3	2	1	0
2	2	2	2	2	2	2	2	2	0
2	2	2	2	2	2	2	2	—	—
2	2	2	2	2	2	2	—	2	0
2	2	2	2	2	2	—	4		
2	2	2	2	2	—	6			
2	2	2	2	—	8				
2	2	2	—	10					
2	2	—	12						
2	—	14							
—	16								
18									

Teacher.—Class, what have I drawn on the board?

Class.—An oblong.

T.—Yes. Into how many parts have I divided it?

C.—Ten parts.

T.—How have I numbered the parts, beginning at the right side?

C.—0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

T.—That is right. I am now going to write *twos* in each of these parts as many times as the figures at the top of each says. Then how many shall I write here? (*Pointing to* 0 *column.*)

C.—Not any.

T.—How many here? (*Pointing to* 1 *column.*)

C.—One.

T.—You may count them as I write. (*Teacher writes and class counts.*)

C.—One.

T. (*Drawing line under* 2.)—Add.

C.—Two.

T.—How many in here? (*Pointing to* 2 *column.*)

C.—Two.

[Teacher write and class count one, two; teacher draw line and class add, two, four. In each column teacher write required number, class count and add each until all are finished, when the following questions may be asked.]

T.—How many times did we take two here? (*Pointing to* 0 *column.*)

C.—No times.

T.—Then no twos, or no times two are how many?

C.—No times two are nothing.

T.—How many times did we take two here? (*Pointing to* 1 *column.*)

C.—One time.

T.—Then one two, or one times two, is how many?

C.—One times two is two.

T.—How many times here? (*Pointing to* 2 *column.*)

C.—Two times.

T.—What was the sum?

C.—Four.

T.—Then two twos, or two times two, are how many?

C.—Two times two are four.

[After taking each column, let the class recite. "No times two is nothing; One times two is two; Two times two are four," etc. After which, teacher question as follows.]

T.—How many times do we take two here? (*Pointing to* 9 *column.*)

C.—Nine times.

T.—What was the sum?

C.—Eighteen.

T.—Then how many twos in eighteen.

C. (*Who see at once.*)—Nine twos in eighteen.

T.—You may say it in this way,—Two is in eighteen nine times. Now, look at the next column, class, and see if you can answer this question.

T.—Two is in sixteen how many times?

C. (*At once.*)—Two is in sixteen eight times.

Teacher now erase the work and tell class to build the table on their slate. This they will do readily, after which they certainly will be better prepared to memorize it as they can do so understandingly.

LESSONS IN DRAWING.

BY MARY D. HICKS.

II.

LESSONS IN FORM FROM SOLIDS.

Drawing should be based on a correct perception of form. Ideas of form should be first obtained from solids, from things which are not only visible but also tangible. Therefore, lessons in form from the solids should not only precede the regular work in drawing, but should also be afterward continued as the basis of the regular work in drawing. In form-lessons given in the first few weeks of school, before regular work in drawing is commenced, children should become acquainted with the simple geometric solids, the sphere, the cube, the cylinder; they should be led from surface to face, from face to edge or line, from edge or line to point. They should be carefully trained to consider an edge as a line and to represent it by drawing a line, thus laying the foundation for drawing from objects.

The instruction in drawing, most generally given, is mainly directed to enabling children to copy well a figure from the blackboard or paper; that is, technically speaking, to draw from the flat Children may receive continued instruction of this sort, and may copy a drawing of an object very well; and yet, if a solid or object is given to them to draw from, they are bewildered; they are accustomed only to lines upon the blackboard or paper; they see no drawn lines in the object, and they are utterly at a loss. But if they are led to see the lines in objects, if they are taught that an edge is a line, if they are trained to find the lines in objects and to represent them by drawing lines, then drawing from objects becomes easy. In this connection, it must be remembered that although geometric terms and figures are given in primary drawing, there should be no attempt to present abstract geometrical ideas to the children.

They must learn through sense-perception, and all the forms presented to them should be visible and tangible. Therefore, in teaching a line, no attempt should be made to give a geometric conception of a line, but to give a line which can be seen, as on the blackboard, paper, or other surface, or a line which can be felt, as the edge of a solid.

The form-lesson which follows is, of course, not intended as a mode, to be followed *verbatim*, but is intended to be suggestive in the following particulars: That every child should not only see the solid, but should also handle it; should not only receive the idea of the lesson, but should also be led to express it; should not only hear the name or term, but should also use it; should not only learn the form of a geometric solid, but should also be led to see that form in objects; and, finally, should express the form by drawing and moulding when suitable.

ORDER OF A LESSON FROM THE SOLID.

1. Review.
2. Observation
   - by the eye.
   - by the hand.
3. Term or name given.
4. Drill.
5. Application.
6. Drawing and moulding when practicable.

A Sphere.—A sphere will roll.
A sphere will stand.

These sentences embody the ideas to be developed in the lesson.

(*Teacher at the head of a long table; children around it; a number of blocks and objects all along the middle of the table.*)

Teacher. (*Taking up a sphere.*)—See what I have. (*Rolls it gently to Annie, who stands next her*). Annie, what did I do?

Annie.—You rolled the ball to me.

T.—You may take it in your hand. You may roll it gently to me. (*Annie rolls it to T.*; *she rolls it to John, who stands next on the other side of T.*) John, take it in your hands. You may roll it gently to Mary, who stands next you. Mary, you may roll it gently to George, who is on the other side of the table, next to Annie. George, what can you do with it?

George.—I can roll it.

T.—You may roll it gently across the table to me. What can the ball do?

Edward.—The ball can roll.

T.—Yes, the ball can roll. What is the ball doing now?

Ed.—The ball stands.

T.—Yes, the ball stands. It can roll, and it can stand. We call it a sphere. (*Rolls the sphere to Margaret.*) Margaret, you may take the sphere in your hands. What have you in your hands.

Margaret.—A sphere.

T.—All tell me what Margaret has in her hands.

Ch.—A sphere.

T.—Margaret, hand the sphere to Elsie, who stands next you. Elsie, you may bring the sphere to me. What have you brought to me?

Elsie.—I have brought a sphere.

T.—Carrie, can you find a sphere on the table near you? (*Carrie finds one.*) What have you found?

Carrie.—I have found a sphere.

T.—What can you do with the sphere?

Carrie.—I can roll it.

T.—What can you roll?

Carrie.—I can roll the sphere.

T.—Can you do anything else with the sphere?

Carrie— I can make the sphere stand.

T.—You may bring the sphere to me, and make it stand by this sphere. (*Carrie brings it.*) What have you done with the sphere?

Carrie—I have made the sphere stand.

[Teacher gives other children similar exercises that they may use the word "sphere."]

T. (*Rolls the sphere to Jennie.*)—What does the sphere do, Jennie?

Jennie.—The sphere rolls.

T.—Hand the sphere to James. James, put the sphere on the table. Tell me about the sphere now, James.

James.—It stands.

T.—What stands?

James.—The sphere stands.

T.—Roll it to me, and I will make it stand here. Amos, can you find another sphere? (*Amos finds it.*) That is right. Bring it to me, and make it stand by these.

Teacher has other children find other spheres on the table, or perhaps in their pockets. Teacher must be provided with beads, marbles, oranges, and other spherical bodies, for application, in case the children have none. Teacher also asks the children what they can think of that looks like a sphere.

For "busy work" (that is, work to be done carefully by themselves at their seats) children may draw little spheres between and touching the lines ruled upon their slates for writing.

The other day I saw an admirable lesson in form given to children who had been in school a little more than a year. The sphere, cone, and cylinder were reviewed. Children were allowed to find spheres, cones, and cylinders, or objects which resembled these various solids. If Willie found a cylinder, he stepped in front of the fifty children sitting in their seats, held it up and said, "I have found a cylinder. It has a curved surface and two flat faces." If Mary found a sphere, she stepped to the front and said, "I have found a sphere. It has a curved surface and it will roll." If Bessie found a cone she stepped to the front and said, "I have found a cone. It has a curved surface, a flat face, and an apex."

The teacher, seeing the children a little weary, quickly changed the manner of the lesson. Stepping to the front, she said, "Children, do you remember the game we sometimes play about form? Now, children, I am a form. Ask me questions and see if you can find out what I am."

At this the children lost their weariness, and the air was full of hands raised by those ready to ask questions.

Teacher.—Julia, you may begin.

Julia.—Have you a curved surface?

T.—I have a curved surface.

Mabel.—Can you roll?

T.—I can roll.

Willie.—Have you an apex?

T.—I have not an apex.

Mary.—Do you like to roll?

T.—Yes, I like to roll.

Mary.—Have you any flat faces?

T.—I have flat faces.

Florence.—Have you two flat faces?

T.—I have two flat faces.

Ruth.—Do your flat faces look like circles?

T.—My flat faces look like circles.

Eddie.—Are you a cylinder?

T.—I am a cylinder. Now, Eddie, can you be a form? Be sure you know what you are.

So Eddie stood in front and answered the questions. The children soon found out that he was a sphere. Mabel took the place, and she proved to be a cone.

Thus the lesson on form closed.

◆

OUR GREAT HOME.

[*Lessons preparatory to the Study of Elementary Geography.*]

BY KATE L. BROWN, WAKEFIELD, MASS.

IV.

Since the last exercise the children have been very busy. The energetic Bertram has proposed that each child make a list of the various trades and occupations, thus giving Miss Russell a pleasant surprise. In consequence, Main Street has been unusually frequented by small children, copying signs in little note-books; even penetrating to rooms in public buildings, inquiring what branch of business was carried on there. Parents and older brothers and sisters have been appealed to for assistance. The result is, every child has something, many have quite long lists. Miss Russell is gratified by the spirit of enterprise manifested.

THE DIFFERENT WAYS TO EARN A LIVING.

Teacher.—I expect a great deal from you to-day. You have shown an interest in these lessons which makes me very happy. Firstly, I want you to tell me about the employments where the hand is used constantly. Begin with the people who live near the school, as we did in the last lesson.

Bernard.—I should name *farming* first of all Papa told me that it was a very important occupation. If we do not till the soil, people will not have food to eat.

T.—Can you tell me what is raised on an ordinary farm?

B.—Fruit, vegetables, corn, wheat, rye, oats, barley, and sometimes cattle and horses.

T.—The farms in New England are very unlike the farms of the great west. Our soil is very rocky and barren, our farms are small, our crops small. But in the Western States you will find acres and acres of corn or yellow grain. The West is the great farming region of our country.

Bertram.—Some farmers raise just cattle. Tom Wayne, a boy who was at Manchester-by-the-sea with us last summer, lives on a cattle-ranch in Texas. His father owns miles and miles of pasture-land and ever so many head of cattle.

T.—We would hardly call such a man a farmer; *grazier* would be a better name. Lands that are not especially fertile, but afford good grass, are used for grazing. It takes a good many cows, sheep, and lambs to give meat to a whole nation of people. Mabel, you may go on,

Mabel—The people must have houses to live in: men who build houses are called carpenters.

T.—What do we call the men who build the stone foundations?

Bessie.—We call them *stone-masons*, and the men who lay the brick are *brick-layers.*

Herman.—The men who furnish the glass for doors and windows are *glaziers.* Then there are plasterers and paper-hangers who fit up the walls, painters to paint inside and out, plumbers who put in gas and water-pipes, and locksmiths to furnish locks and keys, bolts, bars, and knobs and bell-wires.

T.—Well done, Herman! I think that we will keep to the house for the present.

Marie.—We shall need carpets and furniture. The people who sell them are merchants; the people who make furniture are called cabinet-makers. We must have pictures, too, and vases, and fancy things.

T—Can anyone tell me about different kinds of pictures? How are they made?

France.—Some are painted. The people who paint are called artists. My papa is one. There are artists who work in crayons, and ink, and pencil too.

T.—What kind of a picture is this? pointing to a cattle scene from Auguste Bonheur, on the wall.

Austin.—That is a heliotype engraving; and that picture is a photograph.

T.—Can any one tell the difference between an engraving and a photograph?

Daisy.—I know that the *sun* helps to make a photograph.

T.—In an engraving the picture is drawn on a steel plate first; the plate is inked, and an impression taken on paper. People who prepare these plates are called engravers. There are steel-engravers and wood-engravers. The pictures in your reading-books are wood engravings

Harry.—O Miss Russell, I know about that. Last summer we all went to Connecticut to board, and in the family there was a wood-engraver. He had little blocks of wood with lovely pictures on them drawn in ink, and he used to cut little bits of the wood out with tiny tools.

T.—We could spend hours talking on this subject. It is a very delightful one, I think. But one thing more I must speak of. You will notice on wall papers and carpets, and calicos patterns of leaves, flowers, and various figures. These are all planned by people called designers.

Adèle.—Why, teacher, *we* make designs! Don't you remember I made a design for a tea-pot tile, with the ivy-leaf?

T.—Yes, I remember. Designers take a leaf or flower or some pretty figure, make it into a little stiff-set pattern and repeat this pattern until a surface is covered or a border made, or a design for a tile planned. I know of many young men and women who learned to design as you are learning it, in the public schools, who are now earning their living by making designs for wall-paper, carpets, calicos, etc.

Elsie.—Little boys and girls make pretty things with knives out of wood. Grandpapa sent me a little cunning house and a penholder, all carved, from Switzerland. He said that lots of little folks earned money by making such things,

T.—Very true, and in Germany children make toys. There is one city, Nuremberg, where the chief occupation is toy-making. The old rhyme runs:

> "The children of Nuremberg take pleasure in making;
> The children of Boston take pleasure in breaking."

Now, my little ones, we must stop right here, for it is time for Mr. Klein and your music lesson. We will go on with this subject to-morrow.

◆

— To educate a child perfectly, requires profounder thought, greater wisdom than to govern a state.—*Channing.*

SKETCH OF A LESSON IN FORM.

BY "SHADOW."

III.

Teacher comes before the class, prepared to develop ideas of, and teach the different kinds of straight lines,—*horizontal*, *vertical* and *oblique*.

MATTERS TO BE TAUGHT.

(1) A line that extends upward and downward, and inclines neither to the right nor to the left, is called a *vertical* line.

(2) A line that extends to the right and to the left, and inclines neither upward or downward, is called a *horizontal* line.

(3) A line that extends both upward and downward, and inclines both to the right and to the left, is called an *oblique* line.

Review previous lesson. test the knowledge by having pupils make illustrations, and see that the previous work has been good, linking the new lesson to the old. After hearing definitions of *corner*, *point*, and *line*, *straight* and *curved*, *present a ruler with straight edges.*

Teacher.—Observe the position of this object, notice what I am doing to this edge, and tell me what is true of its directions (*slowly tracing edge from bottom upward*).

Child.—It goes upward.

T.—You may give me another word that means the same as *go*, as you use it here, and sounds better.

C. or *T.*—Extends.

T.—Now tell me what you have learned of the direction of this edge.

C.—It extends upward.

T. (*Tracing from the top downward.*)—And now what is true of its direction?

C.—It extends downward.

T.—Then in what direction does this edge extend?

C.—It extends both upward and downward.

T. How many think that is true? [Class decide. Teacher confirms.]

T.—Look again and tell me what is true of its inclination to the right.

C.—It does not incline to the right.

T.—And what is true regarding its inclination to the left?

C.—It does not incline to the left.

T.—Then what have you learned concerning its inclination to the right or left?

C.—It inclines neither to the right nor to the left.

T.—How many agree with James? [Class decide. Teacher confirms.]

T.—Now tell me what you have learned regarding the direction of this edge.

C.—It extends upward and downward, and inclines neither to the right nor to the left. [Class decide. Teacher confirms.]

T.—If you wished to represent this edge on the board, what would you do?

C.—I should draw a line. [Class decide. Teacher confirms.]

T.—And in order that it should be a true picture of this edge, what would be true of the direction of the line?

C.—It would extend upward and downward, and incline neither to the right nor to the left.

T.—John may make a line to represent this edge. [Child does so.]

T.—How many think that John has made a true picture of this edge? [Class decide. Teacher confirms.]

T.—What kind of a line has John made, thinking of its direction?

C.—John has made a line which extends upward and downward, and inclines neither to the right nor to the left.

T.—Who can tell what a line which extends upward and downward, and inclines neither to the right nor to the left, is called?

C. or *T.*—A *vertical* line.

[Child repeats (full statement): "A line that extends both upward and downward, and inclines neither to the right nor to the left is called a *vertical* line." Simultaneous recitation of the same while teacher writes it on the board.]

T.—James, you may go to the board and make three vertical lines. [James does so. Class criticising; Teacher directing.]

T. (*Presenting ruler as before, but in different position, tracing along the edge.*)—In what direction does this edge extend?

C.—It extends to the right.

T. (*Tracing back.*)—And in what direction may you say it extends now?

C.—It extends to the left.

T.—Then what is true concerning the direction of this edge?

C.—It extends to the right and left. [Class decide. Teacher confirms.]

T.—And what is true of its inclination upward or downward?

C.—It inclines neither upward nor downward.

T—Now tell me what is true regarding the direction of this edge?

C.—It extends to the right, and to the left, but inclines neither upward nor downward. [Class decide. Teacher confirms.]

T.—Find other edges that extend to the right and to the left, and incline neither upward nor downward. [Child finds several, stating each time: "This edge extends, etc."]

T.—Jane may make a picture of this edge on the board. [Child does so.]

T.—What has Jane done?

C.—She has drawn a line on the board to be a picture of that edge.

T.—How many think it is a true picture? [Class decide. Teacher confirms.]

T.—Since it is a true picture of this edge, what must be true of its direction?

C.—That line extends to the right, and to the left, and inclines neither upward nor downward. [Class decide. Teacher confirms.]

T—Who can tell me what a line which extends to the right, and to the left, and inclines neither upward nor downward, is called?

T. or *C*—A *horizontal* line.

C. (*Repeat in full.*)—A line which extends to the right, and to the left, and inclines neither upward nor downward, is called a horizontal line. [Class repeat, while teacher writes definition on the board.]

T.—Mary may make three horizontal lines, while John makes two vertical lines on the board. [Children do so; class criticising; teacher directing.]

T. (*Again presenting edge of ruler.*)—Now in what direction does this edge extend?

C.—It extends upward and downward.

T.—And in what direction does it incline?

C.—It inclines to the right, and to the left.

T.—Tell me what you have learned regarding the direction of this edge.

C.—It extends both upward and downward, and inclines to the right, and to the left. [Class decide. Teacher confirms.]

T.—Find other edges that extend upward and downward, and incline to the right and to the left. [Child finds several.]

T.—Susan may make a picture of this edge, on the board. [Class decide as to correctness. Teacher confirms.]

T.—What kind of a line has Susan drawn, thinking of its direction?

C.—She has drawn a line which extends upward and downward, and inclines both to the right, and to the left. [Class decide. Teacher confirms]

T.—Who can give the name of a line of whose direction this is true?

C.—A line which extends upward and downward, and inclines to the right and to the left, is called (*C.* or *T.*) an *oblique* line. [Simultaneous recitation while teacher writes on the board]

Drill by having class read definitions on the board, by having them make different kinds of lines, and by making different kinds herself, and having them select and name them. Then erase definitions and lines on the board, and have children repeat and reproduce them.

LESSONS IN TONIC SOL-FA.

BY T. F. SEWARD.

II.

Each lesson should begin with a thorough review of the work previously done. The review at this point may be in the following order

1. Questions, as to the number of tones learned, their names, etc.
2. Singing by the pupils from the hand-signs.
3. Singing from a diagram on the blackboard, as given in last number of PRIMARY TEACHER, page 180.
4. "Ear exercises;" *i. e.*, pupils naming the tones as sung by the teacher. In all these exercises do not forget to change the key occasionally.
5. Write a melody on the board like the following:

D D D D M M M M D M S M S M D

From the beginning, and throughout the course, pupils should be accustomed to *individual* effort. For instance, let one come forward and point to the diagram on the blackboard while the rest sing. Again, after the above melody that is written on the board is quite familiar, let different pupils rise in their places and sing it alone. In such ways the children will soon be led to sing alone with as much confidence as they read, or go through any other exercise.

The next new tone to be introduced is the upper octave of DOH. This should be *discovered* by the pupils (as was the ME) and first called *new tone*.

Teacher.—If I should say that this new tone is like DOH, ME, or SOH, which do you think it would be the most like? A majority of the class will be certain to say DOH.

T.—Yes, the new tone is so much like DOH that we will give it the same name. Is the new DOH higher or lower than the old one? *Ans.*—Higher.

D′ *T.*—I will write it in its proper place on the board. Have I
S made it any different from the lower DOH. *Ans.*—Yes, you have
M put a mark by it.
D *T.*—Is the mark near the top, or bottom, of the letter. *Ans.*—
The top.

T.—This will remind you that this DOH is higher than the other one. We will also give it a different name, in speaking of it. We will call it ONE-DOH. What shall we call it? *Ans.*—ONE-DOH.

T.—In *singing* it, we will only use the name DOH, because we will know by the sound whether it is the higher or lower DOH.

T.—The hand-sign for ONE-DOH will be the same as for DOH, except that the hand is raised, thus. [Illustrates.]

After exercising the class for sometime, on the new tone, by pointing to the diagram, by the hand-signs, and by having the pupils name as the teacher sings to *lah* or *ah*, he may write a melody, thus:

D D D D M M M M D M S D' S M D

When writing an exercise on the board it is well to have the class sing as the notes are written. It occupies their attention and gives them *practice*, of which they cannot possibly have too much. In writing the ONE-DOH it is well, sometimes, to write the D and let them sing it, and then add the mark, thus making a strong contrast between the two tones.

Other exercises will be found on page 4, "Music Reader."

S The lower SOH may next be introduced, its sign given, thus, S,;
M its name, SOH-ONE; its relation, as in the diagram; and the hand-sign.
D After sufficient practice of the new tone, as suggested in connection
S, with ONE-DOH, melodies should be written on the board, and sung by the whole class, by divisions of the class, and by single pupils. The following is a specimen:

Key F.— D M S M D S, D S, D M S M D S, D

If pupils have a difficulty in singing any written exercise, it is seldom necessary for the teacher to sing it for them. They will nearly always sing it correctly *if the same tones are pointed on the diagram.* The relative position of the letters (notes) aids the learner much in singing the tones.

The following rule is invariable: *Never sing with the pupils.* When the teacher sings, the pupils listen. When the pupils sing, the teacher listens. When a difficulty occurs which the pupils cannot conquer themselves, without assistance, let the help of the teacher be in the way of a pattern from the teacher, which the class are to imitate. Singing *with* the pupils causes the exercise to be merely a mechanical one. They can never become independent by that method.

Additional exercises on page 5, "Music Reader."

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WRITING-LESSONS FOR LITTLE FOLKS.

BY LYMAN D. SMITH.

VIII.

SOME BLACKBOARD WRITING.

"Children, what letter do you have for your writing-lesson this morning?" "*w*." "What letter is *w* like?" "*i*, *u*," are the answers all over the room. "*w* is some like *i*, but it is still more like *u*. It is a sort of double *u*. There is one little room in *u* between the straight lines or walls; now in *w* there are two little rooms or a double room; but the second little room is only half as wide as the first little room. You move your hand, when you write *w*, just the same as you do when you write *i* and *u;* only, when you make the last upward curve of *w*, you move your hand up nearer the *u* part of the letter; then you press your pen a little for the dot, and move your hand out to right in a gentle curve. See! you would only have to raise the last curve of *u*, add a dot and a gentle curve to right, und *u* would become *w*," illustrating the change on the blackboard. This transformation pleases the children, and they are all wide awake and earnest about writing *w*.

"Now close your books, and try to think just how *w* looks. Can you all think how it looks, without seeing it?" "Yes! Yes!" from many voices. "Well, then, you must all have a picture of it in your minds. I wonder if your pictures are good ones. The pupils in the left row may wtite *w* on the board. I am going to write it, and I want you all to see which picture is best." The children choose my *w*. "Some of your pictures of *w* are pretty good. Harry's *w* looks well, but he kept lifting the chalk, and made it by piecemeal. Is that the way to write?" "No! No!" in a chorus. "I do not think it is, either. Harry, step to the board and *write w*. Did Harry *write* the letter, now? Why so, Charles?" "Because he didn't lift his hand off." "You must always write the whole letter at once, just as you always speak a whole word at once. How many straight lines are there in *w*?" "Two," and some little dissenters say "three." I make the letter on the board, and then draw two long straight lines on main slant down through the straight lines of *w*, and show the children that only the two down-lines are straight. "Do the straight lines slant alike? that is, do they lean over just the same?" "Yes." I next draw slant-lines through the children's letters, and the class are all merry over the crookedness of their would-be straight lines. The next row of pupils go to the board with special instructions to make straight lines straight, and to give them right slant. "Are these letters any better, little folks?" All are quick to see that some of the best ones are better. "How many curves are there in *w?*" "Three." "There are four curves, if you count the top curve. Do these three rising curves bend to the right or to the left?" "To the right." "Name them." "Right curves." "Look at this top curve, and see how it bends down, so that it is easy to join *w* to the next letter. I will write *i* after it. This top curve is like an arm to the letter." The third row are going to the blackboard. "Do your best, little ones! What makes all your letters look so broad and round at the bottom? My *w* does not look so." The eyes are now all directed to the wide turns, and many hands are moving. "What is the matter, Lina?" "Oh! the little turns are too big." "Right! Always try to make very short turns, they are so much prettier. Don't make the turn until you get almost to the bottom of the letter, and then you will make the turn short as you want to have it." The next row are going to the board. "Now, look out for short turns. Pretty well done! but you are making hard work of your writing. What makes you try to squeeze the chalk, and why do you press it so heavily on the board? You must cramp your fingers doing so. Write easily, just as you speak easily. Try again, and do better." The fifth row are now writing. "What funny letters! Each one looks all in a bunch. What makes them look so?" The children are puzzled. I draw horrizontal lines across some of the letters, at the point where the lines meet. "Why, these lines run together and spoil the letters! The lines should only touch at the very top of the letter, and then run right away from each other." The sixth row write. "These letters do not please my eye. They stand bolt upright like printed letters. A written letter has no beauty, unless it slants. Think just how the straight lines slant, and then aim for the top of those lines. You have to think of the whole letter when you write it, just as you think of a whole word when you speak it." All who have not written are now called to the board. "Be sure to slant the *w's*, and to let the lines touch only at the top."

The criticism should not be carried too far. Take only a few leading points at a lesson, and help the pupils to help themselves, and to see something for themselves in the letters. The blackboard writing is very much like reading aloud. The writers are conscious that many eyes are looking at their writing, and they try to do their best. One-half of the class can write at a time on the board, while the other half watch and criticise the writing. Then send the writers to their seats, and the critics to the board to take their turn. Make the pupils perfectly at home with blackboard-writing, and their book-work will be all the better for it. The *w* lesson in No. 1, lead-pencil book, will now have some live interest for the children, and will finish up their first group of letters.

FIND A WAY, OR MAKE IT.

BY MARY E. LAMBERT.

Ambition sleeps, lad, in your brain,
  Bright hopes may soon awake it,—
You see the goal, but ne'er a path:
  Then find a way, or make it.

To get a cocoanut's rich meat,
  The shell is hard; you break it;
The fragrant leaf its odors holds
  Until you bruise or shake it.

Untrodden is the path you choose,—
  You may be wise to take it;
But look ahead, all danger see,
  And then you may escape it.

A mountain, far too steep to climb;
  Well, then, don't try to do it.
You may be able to go round,
  Or patiently dig through it.

A fence, you say, but ne'er a gate
  What can you do? you wonder.
Just scale the wall; mount, if you can
  And if you can't, crawl under.

Your way is muddy? wait awhile,—
  Let winds and sunshine dry it;
Still, wait not for another rain,
  To see some comrade try it.

A river deep you cannot swim?
  No steamer there; you know it?
Well, if there is no other way,
  Build your boat and row it.

Nay, lad, we know the way is hard,—
  Down hill and up steep mountains;
And oft you drink from muddy stream
  For want of some clear fountain.

Go down, and you'll have many a kick;
  Go up, and some will push you;
But win your way, and praise will come
  From those who tried to crush you.

False praise is but a phosphorus gleam,—
  For fame we oft mistake it;
Still, for a while it lights our way,
  Until we overtake it.

Don't hide your talent through a fear,
  But bravely go and stake it.
Wear out, don't rust,—to reach your goal,
  Lad, find a way, or make it.

EDITORIAL.

Young teachers often ask how can we win the hearts of our pupils and make hem feel and act in sympathy with us? No one can express in words the exact methods, or explain the natural or acquired tact and ability, which the true teacher exercises who secures the entire confidence or love of her pupils. Many general suggestions might be made which are absolutely essential to secure this result. Young children are quick-witted. They seem to know by instinct, and take the measure of, a *new* teacher as soon as she enters the school-room, and if they see any assumption of dignity, or want of genuineness in her manner or speech, they are quick to discern it, and take advantage of it. Probably *kind words*, spoken in the *right spirit*, are as potent as anything in winning the esteem and affection of the young. Few teachers know or realize their true value. Young hearts are often yearning for encouraging words. They have their little trials and anxieties, their difficulties and perplexities, and feel a keen sense of pleasure when their teacher, in a pleasant voice, cheers them on in their daily tasks, and lifts from their minds the little loads of care which burden them. Of one thing every teacher may be certain; that scolding and chronic fault-finding will not win the hearts of the young. Scolding turns a school-room into a pandemonium, and distills gall instead of sweetness into the work of the teacher. Every teacher of young pupils should put herself under bonds to be good-natured. We well know that the physical conditions and material surroundings often exert a powerful influence and have a strong tendency to disturb the equanimity and exasperate the feelings of the teacher. All of these things must be overcome, the nerves must not be unstrung, the spirit must be controlled and kept in a state of peace, if we would, as teachers, lift the burdens from the hearts of our children. Patient persistency in the use of kindness and gentle speech is an element of power in the teacher. Yes! young teacher, you may be firm, but you must also be very kind if you would send rays of sunshine into young hearts and win their lasting affection and esteem. One has truly said, "Kind words are more than gems from Golconda, or pearls from the sea."

We desire to emphasize the suggestions and sound common-sense of the following extract from *The Teacher*, Philadelphia:

"Teaching is not a showy profession. The artisan may, by his inventive skill, excite the admiration and gratitude of multitudes; the lawyer, by one able forensic effort, may make to himself a name; the physician, by his skill, bring back almost from the jaws of death some victim of disease; but the teacher must be contented to labor on from year to year, knowing that her labors may be unrecognized and unappreciated. She must sow with care the good seed, anxiously nurture the young plantlet, and not be discouraged if her labors receive no other recognition than the kindly smile of those whose affection she has won by her untiring solicitude and the pittance which, too frequently, is meted out with a grudging hand. It has been so in the past, and may be so for years to come. The duty of the hour for the teacher is, by all lawful means, to raise education in the estimation of the public; and when men begin to place something like a proper value on education, they will also estimate more properly the profession whose peculiar province it is to impart such education. As the teacher is to be a model for her class, her salary should be such as to draw the best talent into the profession."

The great body of school officers who have become familiar with the work of the teachers of to-day, have a lively appreciation and are awake to the interests involved in their work. The great work of the present hour, outside of the strictly professional duties pertaining to the school-room, for the teacher, is to quicken the interest of the public and raise education in its estimation. The means of doing this great missionary labor must be adapted to the circumstances and conditions of the community in which the teacher is called to labor. Interesting the children is a sure way toward the desired end,—so enthuse them with the love of knowledge that they will carry its spirit to their homes.

In this number of THE TEACHER will be found the first of a series of brief papers by Thomas Tash, Esq, Supt. of Schools of Portland, Maine, upon "Style in Teaching," to which we desire to invite the especial attention of our readers. We would emphasize the importance of the suggestions he makes upon the value of regarding the "little things" appertaining to the primary teacher's work. His wise words should be written on every heart and stamped on every memory. They relate to matters of great moment, and their careful study and application will be felt in every school of young children, and tend to make our schools a blessing to every home and community in the land.

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(Continued from November Number.)

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Lesson on Kindness to Animals.

LESSON VII. — THE DOG.*

(Continued.)

[To be read to pupils by Primary Teachers.]

In 1858 a funeral procession entered the old Gray Friar's grave-yard in the city of Edinburgh, Scotland. It was the funeral of a poor man, and the chief mourner who followed the hearse was the poor man's dog.

After the funeral all the human friends of this poor man went to their homes, but the dog would not leave his master's grave. Day after day people tried to get the dog away, but he would keep coming back to his master's grave. Finally, it became known through the city, and the neighbors fed the dog and gave him shelter in cold weather, and the Lord Provost, or Mayor of the City, gave him a collar; and for about fourteen years up to his death in 1872, he did not leave the neighborhood of his master's grave.

A few years ago that excellent English lady, the Baroness Burdett Coutts, caused a monument to be built for him near the entrance to the Gray Friar's Church-yard, and it will probably stand hundreds of years to tell the people of Edinburgh about this faithful dog.

And now let us see what dogs do for us. In the cold Northern countries where there are no horses or oxen, dogs are used to draw the sleds over the ice and snow. In other countries they are used to hunt wolves and other wild animals, and sometimes to follow bad men who have committed crimes. In countries where large numbers of sheep are raised, they guard the sheep, keeping off all wild animals. In some countries it would not be possible to keep sheep if there were no dogs to guard them. In some places it would not be possible, without dogs, to protect chickens and poultry from foxes and other wild animals.

Thousands of human lives have been saved by them,—lives of persons who have fallen into the water and and would have drowned if dogs had not jumped in and pulled them out. In one case, while I was in London, England, about eleven years ago, a man fell into the water and sank to the bottom, and a good dog dove to the bottom and brought him up, and brought him safe to the shore. Some of us gave money to buy a beautiful collar for this dog, and on it we had written: "*A member of the Royal Humane Society.*" Sometimes dogs save ship wrecked sailors by swimming with ropes from the wreck to the shore.

They have saved many lives of persons who have been almost frozen or buried under the snow. In one case I knew of three little children at Gloucester, Mass., going home from school in a great snow-storm, lost their way and were covered with snow, and would have died if a good dog had not found them.

And then, dogs guard our houses in the night when we are all asleep, and drive off robbers and other bad people, or if bad people try to get in, they bark and awaken us. Only a short time since, I knew of a case in which a whole family would have been burned to death in their house, in the night, if the dog had not barked and waked them; and of another case, in which a whole family would have died in the night from coal-gas which was coming out of a stove, if the dog had not barked and waked them.

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* *Lessons on Kindness to Animals.* By GEO. T. ANGELL, Esq., President of the Massachusetts Society for the Prevention of Cruelty to Animals.

There are many books filled with stories about the good things dogs have done, and many other books might be filled with other stories just as good. They have always been the friends and companions of human beings, and are generally, when kindly treated, very kind to children. A great writer of books, named *Cuvier*, who has studied this whole subject, thinks that men could spare any other animal better than they could spare dogs.

Some dogs that have been badly treated become cross and dangerous. Some men and boys treat them cruelly, but when they have been treated kindly, I think they are almost always kind. Some of the greatest and best men that have ever lived have been very fond of dogs. Such men as Sir Walter Scott and Sir Edwin Landseer. And poor men often find them their best friends. A poor, sick colored man, sometime since, traveled on foot hundreds of miles to the hospital at Louisville, Kentucky, to see if he could get cured, having with him his dog. But when they told him he must abandon his dog and turn him into the street, because they would not have any dog in the hospital, the poor man took the dog in his arms, and with tears running down his face, said he would rather die with his dog than turn him into the street and go to the hospital. I am glad to say that when they found how much he loved the dog, they let the dog go into the hospital with him.

It is very cruel to keep dogs in the house all the time. They want to run and play just as much as boys do, and if kept in the house all the time will soon become sick. They should always have a comfortable place cold nights, and plenty of good water as often as they want it, and they should not be fed so often as to make them fat and unhealthy. And when, because of old age and sickness, their lives become painful and it is necessary to kill them, then they should always be killed instantly, without knowing that they are going to be killed, and without pain. And we should always be very careful to speak kindly to dogs unless they have done wrong, for there is no animal that suffers more when spoken to unkindly, or that is more happy when spoken kindly to. And I think we ourselves are always made happier by doing acts of kindness to these friendly creatures.

Many more things I should be glad to tell you about dogs, but it would make this lesson too long.

SOME QUESTIONS.

[Others to be added by teacher.]

What can you tell about the dog that would not leave his master's grave?

Who caused a monument to be built for this dog, and where?

What are dogs used for in Northern countries, and why?

What are they used for in other countries?

Mention some of the ways in which they have saved human lives.

What can you tell about the dog that was called "A member of the Royal Humane Society"?

What can you tell about the three children saved by a dog at Gloucester, Mass.?

What can you tell about the family that came near being burned in the night, and the other family that came near dying from coal-gas?

What did Cuvier think about dogs?

Name some of the great men who loved dogs.

What can you tell about the poor

colored man at the Louisville (Kentucky) hospital?

Why should dogs not be kept in the house all the time?

What should dogs always have?

When through sickness and old age, life has become painful to them, how should they be killed?

Why should we speak kindly to dogs?

OUR NOTE-BOOK.

SCHOOL PASTIMES.

CONVERSATIONAL GAMES.

Remembering with what pleasure children enter into the game of "Yes and no," I thought I might with profit introduce some such feature into my school-work, in connection with the "Oral Instruction." We had been at work for two or three weeks upon "Animal Lessons." I had taken such animals for study as were most familiar to the children. I had led them to tell what they knew about any animal from personal observation, encouraging them to tell any little anecdote they might have heard. Occasionally I would tell them some curious fact or peculiarity, while if it were a domestic animal we were studying, I would suggest to them that they should notice for themselves and tell me about it the next day.

When a number of animals had been talked over in this way, I would start a little game with them, saying: "I am thinking of a little animal the children all like to watch. About as large as a kitten, and it is covered with fur. Think what it may be and ask me any questions you like about it, only do not call it by name."

The hands being raised, each child would question me about some animal he had in mind, no child being allowed to ask more than one question at a time: "Has it long ears?" "No, it has not long ears." "Does it live in the house?" "Yes, sometimes when we make a pet of it." "Do we put it in a cage?" "Yes." "Has it four legs?" "Yes." "Has it pink eyes?" "No."

Here many who had been thinking of a rabbit, would perceive they were wrong, and listen eagerly to the other children's questions: "When it is out of doors does it live in the woods?" "Yes." "Can it run very fast?" Yes." "Can it run up a tree?" "Yes." "Will it spring from limb to limb?" "Yes." Has it a long, bushy tail?" "Yes." "Is it timid?" "Yes." "Does it have long sharp teeth?" "Yes." "Does it like nuts?". "Yes."

Here most of the children would have taken my thought and the questions would come faster and faster. "Does it make its house in hollow trees?" "Yes." "Does it sometimes make its home under the ground?" "Does it lay up nuts for winter?" 'Yes." Does it carry them home in its mouth?" "Yes." "Does it use its paws like hands?" "Does it knaw the nuts with its sharp teeth?"

When the questions had become exhausted, the climax would be reached when I said, "You may ask me its name." "Is it a squirrel?" would be eagerly asked, while a sigh of satisfaction would follow the answer "Yes." Or if I wanted to recall quickly the characteristics of any animal, we would play "Guess what I am."

"Children, I am a little animal about as large as this" (showing with the hands the size of a cat). "I like to stay in the house, though sometimes you will find me in the barn or stable. I have a fine fur coat; some of my brothers and sisters wear a black coat, or black and white or grey, — mine is white. I have a little pink nose, and large blue eyes, and I can see very quickly with them. But if I lie in the sunshine I wink and blink, for I can see better in the dark; still I like to lie in the sun-shine where it is nice and warm, and I do like a soft cushion. I am fond of milk. I like raw meat and fish, and when I am hungry I go out hunting; then the rats and mice had better look out for my sharp claws and teeth. Sometimes, if I get very hungry, I *will* catch a liftle bird. I am fond of children, and children love me when I am good. I am almost always good if they are kind to me, and draw my claws in out of sight under the soft cushions on my feet, though sometimes if the children are rough with me, I will scratch to warn them to take care. I am better than some children, for I walk so softly I never wake up the baby. I am very neat and wash my face and paws very often with my rough tongue, and brush down my fur every day to make it smooth and glossy. In tact, I am a very well bred,—what, children?" "Cat."

PRIMARY TEACHER.

HINTS AND QUERIES FOR PRIMARY TEACHERS.

I. F. Hall, Supt. of the schools of Dedham, Mass., in his excellent *Teachers' Manual* (just published), gives the following "Hints and Queries for Primary Teachers." We shall from time to time insert in Our Note Book these carefully condensed "bits" of wise suggestion and ask our readers to study them in their practical relations to their own work.— *Ed.*

QUERIES.

1. *Why am I doing this?*
   (*a*) Helping my pupils by explanations,— by telling what I know.
   (*b*) Talking, instead of leading them to talk.
   (*c*) Presenting *words*, not *things*, for their study.
2. Are my pupils *prepared to learn* what I am about to teach?
3. Does the point I am to teach to-day *joint in* properly with the knowledge already acquired?
4. Do my pupils increase in "mental grasp" and "thirst for knowledge" more and more?
5. Do I improve in teaching, less time and effort being required *each week* to teach a subject thoroughly?
6. Do I have a *cheerful*, neat, and pleasant school-room? If not, *whose* is the fault?
7. Do I give my scholars plenty of exercise, gymnastics, etc.? Is the air of the school-room kept pure?

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"Why, she says, 'You may take this lesson again, Louis,' and then I know she'll keep at me till I get it. But she does it so kind o' pleasant, that somehow, I like to study, just to please her."

When it pleases a scholar to please his teacher, she is enthroned, and wears a crown more enviable than that of Bourbon or Brunswick.

A word can never be unspoken. She is unfortunate, who utters in a passion what, afterwards, she would fain recall. S. M. W.

OBITUARY.

Whereas, By the sad and untimely death of Miss Belle Cushman, the corps of teachers of this city has been deprived of a much esteemed member; therefore, be it

Resolved, That while we recognize in this sad event the hand of Infinite Wisdom, yet we can but deplore the loss of our associate.

Resolved, That we would express our high appreciation of her ability and general worth as a teacher, of her amiable and generous disposition, and of her gentle and ladylike qualities.

Resolved, That with a feeling of the deepest sincerity, we tender our profound and heartfelt sympathy to the relatives and friends of our late companion, who have realized with sorrow the sudden breaking asunder of the chain that linked their hearts in cordial love and trusting friendship.

Resolved, That a copy of the resolutions be sent the bereaved family, and be published in the *Daily Evening Times*, *Union and Journal*, and THE PRIMARY TEACHER.

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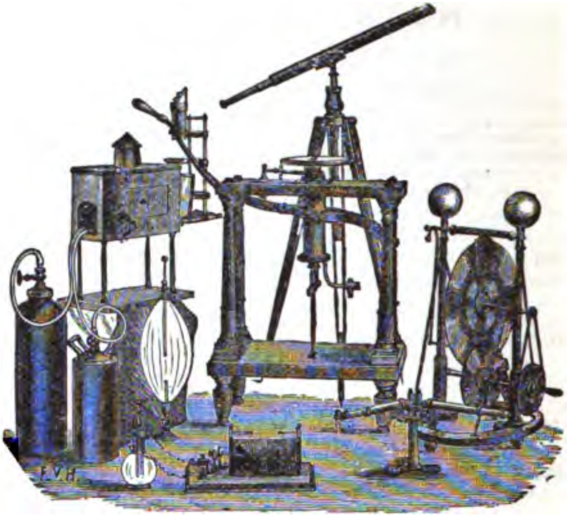

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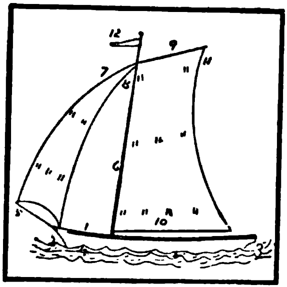

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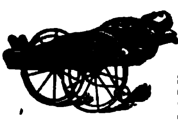

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THE
PRIMARY TEACHER.

VOL. V. MARCH, 1882. NO. 7.

STYLE IN TEACHING.

BY THOMAS TASH, SUPT. OF SCHOOLS, PORTLAND, ME.

II.

(Continued from January No.)

3. *Movements of the school should be systematic and orderly.* If the school is well seated, the movements of the school as a whole will the more easily, therefore the more likely, present a good appearance,—more of *style.* Whenever simultaneous movements are demanded of pupils, there should be some definite object in view, as the saving of time, the more orderly appearance of the school, and the safety of pupils in passing out and in at recesses and at other times, the securing of exercise, precision, and relief from study. These movements, once fixed upon, should be well understood and practiced until easy and graceful. There should be no remissness on the part of the teacher, and none allowed on the part of pupils The patient dignity of the teacher should never tire nor yield, but always quietly insist. Whenever the school-room and school is one of a system, its movements must of course correspond to a systematic arrangement of all the rooms, so that there shall be no delay, no disarrangement of the whole plan. Not only should the movements of a school be systematic and orderly, but the positions of the children in their exercises and in their studies and recitations should be properly regarded. The marching of a file of scholars with a regular "*thud, thud,*" in time with the teacher's ruler upon the desk, but without any regard to the bearing or position of the pupils in their lines, presents no style; but quiet movements with an erect and graceful bearing are always pleasing.

When pupils are seated at their desks in study, an erect posture with hands in sight, but *not* folded, is conducive to health as well as pleasing in style. Whenever pupils rise to read or recite, an erect position with hands at the side in recitation, but in reading with the left hand holding the book at a proper distance from the eye, neither too far off nor too near for obvious physiological reasons, with the other hand by the side, gives grace to the exercise,—presents style.

4. *The teacher should govern the school from the desk*, and not be obliged to be constantly running to various parts of the room to give directions and instructions. When occasion demands, there is no objection to a teacher's passing to a pupil's desk, or the pupil to the teacher's. If done with dignity and grace by the teacher, and with quiet modesty by the pupil, it is often a relief to the monotony of school-work. A constant show of hands, and as constant flutter about the room in answer to raised hands, presents no style in the school-room. Pupils should early be taught how, in a graceful way, when, and only when, it is necessary and the teacher disengaged, to claim the teacher's attention, to rise by his desk or approach the teacher's desk and state precisely what is desired; and never should a child's proper wants be neglected. Never, in a well-conducted school, does a child claim the teacher's attention without receiving it. Such a neglect implies either that the children are allowed to make frivolous requests, or that the teacher does not treat the pupils with proper consideration. There is no style attached to "either horn of that dilemma."

It is proper to say that a teacher need not always *stand* in the school-room, much as that has of late been urged. It is as much an abuse of one's self to be always standing in school as it is a neglect of the children for the teacher to be always seated. Whatever posture the teacher takes, whether standing or sitting, it should be suitable to be imitated, for it surely will be and probably by many. For a teacher to be tilted back in her chair to be imitated by the girls, and remarked upon by the boys, is the very opposite of style. To be seated on pupils' desks is not much better.

5. *Teachers should use pleasant tones of voice, but not talk too much.* If teachers were always to use pleasant tones of voice and correct expressions we might more readily excuse much talking; but what shall we say of those who cultivate rough tones and bitter speech, the latter most probably clothed in the most common forms of "false syntax"? Let us quote the old aphorism: "Those that talk the most, often say the least." Whenever it is necessary to give a direction or to impart information, it should be done promptly, clearly, and decidedly. Those for whom it is intended, should not be left to mistake its import or its importance. The teacher should talk easily and correctly, and be well understood; for, "What is worth saying is worth saying well," is as applicable to *saying* as *doing*, especially in the school-room.

Teachers are very apt to contract the habit of using the same expressions in school, and we often hear their pupils quoting them. This much talking and repetition, presents no style.

6. *Teachers are never to be at a loss what to do next.* The work of the school-room should be so thoroughly studied, its plans so well formed and understood, that the teacher should always know just what to turn to next. If there is a definite aim in view, a point to be reached, the direction will not often be mistaken. Where there is an end to be to be gained, means will generally be found to secure it. If the regular order of work is interrupted, at the request of visitors or otherwise, the real teacher has everything so well matured, is so self-possessed, and has so many resources at command, that the return to regular, normal work is as natural and easy as gravitation itself.

A teacher should never be hurried; repose is a mark of power, and so is steady motion. The fly-wheel of the largest Corliss engine has an ever steady, silent motion, unjostled by the numerous wheels and pinions it has set in play. So the teacher, while the source and center of all the activity of the school-room, should always move with quiet power.

7. *The pupils should always be interested and busy.* When this is so, they seldom raise their hands for directions or to make requests; they will seldom be careless, noisy, or uneasy. There will be the steady hum of industry, but no clatter. This will apply to pupils of the lowest, as well as of the highest grades, and there is displayed the genius of the teacher,— the living teacher, — in providing enough for each to do, and in seeing that they do it. Here comes in, in primary schools, the need and the proper use of suitable appliances.

8. *A proper condition and use of blackboards.* The condition of the blackboards,—and a proper school-room should be surrounded with them,—has much influence on the appearance of a school. Blackboards scarred and gray with use and abuse, covered with school work dim and written awry, scarcely legible now, if it ever was,—mingled with writing and figures unfit to be seen, together with perhaps a little ornamentation, now badly defaced, left over from some previous examination or exhibition,—are surroundings of a room giving no expression of style. Blackboards on the other hand, that are *black*boards, covered with work *nicely* written by the teacher, or *carefully* done by pupils, with lines of writing or figures horizontal and with columns vertical, all distinctly legible in any part of the room, with occasional figures and maps *recently* drawn for *use* as well as ornamentation, on part of the board where it can be allowed to remain for a brief time,—these are a pleasing ornament and reflect *style.* They are the inseparable adjuncts of a good school.

9. *The teacher and the pupils should make the most of their school-room and its surroundings.* An untidy school-room, with teacher and children equally untidy, whatever the quality of the school-work, would

never strike one as entirely in *style.* As we approach the building, marks upon the fences and upon the building, with knife, chalk, or charcoal, a school-yard in disorder and an entry full of saw-dust, shavings, and other litter, with clothes scattered about in confusion, prepares one unpleasantly for a visit within. We shall be prepared to find desks on which scholars *can* write their names in the dust, if they have not already done so, and worse, hacked and bruised, if not broken, and an air of general confusion prevailing, — no *style.* No matter how costly the building, it may be in confusion, with so much the more disgrace to the teacher and the school. If, on the contrary, the surroundings of a school house of the cheapest structure, — even an old one, — are in good order, the walls, doors, and entries kept orderly and clean, the visitor will expect to find the interior in like condition; the stove polished, the desks and chairs kept dusted, the walls ornamented with pictures and mottoes, the windows washed clean and surrounded or festooned, in the country, with autumn-leaves, with flourishing house-plants sitting in them, and hanging on the walls on one side a little cabinet of minerals, and on the other, shelves containing a small library of readable books collected, — one can hardly see when or how, — here we find a school-room presenting all the elements of *style.*

Finally, many other things, some of them of even more fundamental importance than those mentioned, as the material of the coat or hat is more important than the fit or fashion, are implied in *style* in teaching. We may mention among these, prompt and regular attendance; teacher and pupils possessing each other's sympathy, confidence, and respect; enthusiasm in school-work; a high regard for propriety and duty; the newest and most approved appliances and methods; careful and well-conducted plays at recess; a clock-like regularity in every school-exercise; these, and many other things dependent on these, will appear in a school showing *style* in its teaching.

Teachers sometimes ask, "How shall we become all that this implies? How shall we prepare for this work, — to show *style* in our teaching?" When teachers are really more desirous of preparing themselves for their work than they are of securing places in which to work, we shall look for the highest *style* in the art of teaching. Normal schools, practice schools, and the visitation of the best model schools, educational works and periodicals will claim the teacher's attention. Nothing that will better prepare him for his work will be neglected.

◆

— The great object of the student is to prepare his mind to use materials which may hereafter be gathered, but not now to gather them.

FIRST STEPS IN NUMBERS.

BY W. W. SWETT.

V.

XXIII. "If a boy has 1 cent and I give him 10 cents, how many will he have?"

"If I give him another 10?"

Here it may be necessary to remind the child that he will then have 2 10's and 1. Most children will reverse the numbers, in thought themselves.

Continue the questions and write 1 and the results following as far as 91, in a column. Erase the column, and let it be reproduced on slates.

Ask similar questions, beginning at 2, at 3, and 5, by which time any column can be constructed by the pupils on the same plan, and the exercise may be adopted, the teacher directing a child to begin at any digit, and count by 10's. Making these columns on the slate will furnish employment out of class-time.

XXIV. Take the column 8, 18, 28, etc., and say, "If I had given this boy 9 cents instead of 10, he would have, instead of 18 cents, only——?"

"If I gave him 9 again, he will have, not 27 cts., but ——?"

Continue thus and write the results as far as 80. Let the peculiarity of this column be noticed. Each right-hand digit is one less than the preceding.

Illustrate by another column, beginning at 7 and ending at 70.

XXV.

6	4	2	9	7	3	6	8
9	9	9	9	9	9	9	9

In the above example 9 is to be added each time, and if there were none to carry, each answer would be one less than the number to which 9 is added.

This will be seen more plainly in such an example as:

6	4	3	7	6	8	2	9	6	5
2	9	2	9	2	9	2	9	2	9

By such little devices the child's knowledge becomes established; while by counting, a lazy habit is acquired which avoids the necessity of learning.

XXVI. "If a boy has 1 cent and I give him 9 cents, he will have 1 and 9, which is the same as 9 and 1."

"If he has 10 cents and 1 cent, and I give him 9 more, he will have——?"

Continue with similar questions to 81 and 9, writing in a column the results.

1 and 9 = 10
11 " 9 = 20
21 " 9 = 30
31 " 9 = 40
41 " 9 = 50
51 " 9 = 60
61 " 9 = 70
71 " 9 = 80
81 " 9 = 90

Note that 9 and 1, 19 and 1, etc., produce the same results.

XXVII. Construct the square:

1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27
28	29	30	31	32	33	34	35	36
37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54
55	56	57	58	59	60	61	62	63
64	65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80	81

Note that the lessons taught in XXIII. run diagonally through the square; that the lesson XXVI. falls in the two diagonals beginning 1 and 10; and that the lessons in XXIV. are illustrated by going down the column. These matters should be dwelt upon until they are clearly appreciated by the pupils.

XXVIII. Let the last column in the square be repeated by each pupil. It may then serve as a lesson in multiplication (see XIII).

XXIX. There is little in the ordinary addition tables now left, to be learned. Let the 3's be committed to memory, there being no aid that is worth considering. We begin at 5 and 3 for obvious reasons.

5 and 3,
6 and 3,
7 and 3,
8 and 3,
9 and 3.

Fasten these in the memory by frequent repetition. Make tickets for them and use with only the 2's and the double numbers.

— The attention of children is not much under the control of the will, but depends upon the interest which they feel in the subject.—*W. H. Groser.*

PRACTICAL LESSONS IN THE KINDERGARTEN.

BY MRS. MARIA KRAUS-BOELTE.

XX.

The natural activity of the child is used to best advantage in the Kindergarten mode of education. It is as natural for children to play, as for animals to gambol, and, therefore, play,— which is activity,— is used as means to educate and develop the child in the natural way; and, therefore, also the means of play used are of the greatest importance. Thorough knowledge is the necessary condition for the complete conception or perfect understanding of any object. With such knowledge we may easily pass to the conception of higher things. With the child, therefore, to the first object given him (the ball), should succeed others which give it the earliest opportunity for instituting *comparison*. By this, of course, is not meant reflective comparison, but only the physical perception of differences which exist among things.

The child, when first given the wooden sphere, will perceive at once the similarity, in form and motion, it has with the soft, colored-worsted ball with which he has become acquainted previously, by play. The sphere will not, like the ball, roll silently over the table, but makes a noise. By touching the sphere, the child will perceive that it is hard and smooth. Also, comparing it with the bright-colored ball, the sphere is found colorless. If the child does not notice likeness and difference then, by play, mother or nurse will call its attention to it. Color, form, space, sound, motion, direction, etc., may be taught in play, as previously in a similar manner with the ball.

For instance: the child will soon find out that the sphere makes more noise than the ball, as the first lesson in quality is taught. To facilitate the act of comparison and to deepen the new impression it conveys, the objects that are to be compared should be as dissimilar as possible,— opposites. The cube is given next, in addition to the sphere. The contrast between these two bodies is a *contrast of forms.* Where there is a difference perceived in the act of comparison, there should also be noticed a resemblance; for comparison implies a certain equality in the things compared.

The cylinder, the third body in this Gift, forms the intermediation between the sphere and the cube, combining the curve of the sphere and the planes and edges of the cube. From these three solids, or fundamental forms, the properties of all other bodies may be deduced; they also convey the impressions of *units* and a *whole.* The three figures are alike in two respects,—they are made of wood, and have an invisible center. In every other way, sphere and cube differ,—notice form and motion. The cylinder resembles both sphere and cube; also it can roll like the sphere, or stand steadily like the cube. The sphere, whether rolling or whirling, never shows a different form, is always the same,—the perfect sphere. If the cube is whirled round the axis of the faces, it changes apparently in form; for no more the cubic form is seen, but instead a perfect cylinder, the intermediate form between sphere and cube, is visible. This not only will give pleasure to the child, but teach it concentration, and awaken new, connected ideas. If the cube is whirled round the axis of the edges, a truncated conic form is seen, termed by the young child, barrel or hub of a wheel. If the cube is turned round the axis of the corners, a double cone is perceived. It may be that this latter form, found by turning the cube around the axis of the corners, led Froebel also to introduce at first the cone as the intermediation form between sphere and cube, together with the cylinder. Froebel says himself, in regard to this: "As the cylinder excludes the intuition of corners and the fixed rotation upon one point, it calls for, and commands in its turn, a body intermediary between the three others; that is to say, uniting the properties of the three,—corners [points], edges [lines], sides [surfaces], plane as well as curved; it is the revolving cone." The whirling of the cube impresses the child with a rotary motion by which the edges are effaced, and the angles become pointless and rounded. The child discovers the relation that exists between the prism and the cylinder, the pyramid and the cone, and in a more general manner, between the many-sided and the round bodies. The object of the Kindergarten is to, "teach the child early to consider a single thing under a great many points of view, several things under a single relation, and to discover what there is common in different individuals; to discern what is essential from what is accidental, what is permanent from what is variable."

All instruction requires the active use of the intellect, with some degree of original thinking, if the acquisition is not to be simply rote-learning or mere cramming. Sphere, cube, and cylinder are material for play, inasmuch as they yield, the readiest conception of the law of the "connection of opposites," and are means for the simplest discrimination of form. This law of the "connection of opposites" is the fundamental law of knowledge, and at the same time is the law of all mental activity. The cylinder also can be turned around any of its three axes. If turned around the axis of its flat sides, its cylindrical form remains unchanged. If turned upon the axis of its round face, the sphere is clearly seen within. Turned upon the axis of its edges, the double cone is visible. From this may be seen, that the sphere is contained in, and contains all the forms of these bodies in itself, inasmuch as it is seen in the cylinder, and the cylinder and cone appear in the cube.

Experiments in regard to light and shadow may be made. For instance, the sphere may be held behind and in front of a lighted candle, showing to the growing child how night and day are produced. The child gains a knowledge in regard to surfaces, edges, and corners. The three bodies are also compared with things in the world surrounding the children, who name objects that resemble the form in question. It may easily be seen that these forms lay the foundation for the future study in geometry and higher mathematics ; also for the study of geography for the axis, poles, parallel lines, etc. When children thus trained in the Kindergarten, begin their studies when older, they will more easily comprehend and have a clearer understanding, their knowledge being based upon clear conceptions of the simpler forms.

◆

TRUE STORIES AND HOW TO TELL THEM.

BY MRS. SARAH H. WYMAN.

IV.

COLUMBUS.

Teacher.—How many of you can tell me anything about Columbus?

Several Voices.—He discovered America.

T.—Why do we not say Lief-the-Lucky discovered America?

Monroe.—We don't know certainly that he ever came here.

T.—That is true, Monroe. We have reason to believe what I told you in the last lesson. Still, we are not sure of what is founded on stories related a long time ago. And even if it be all correct, the Northmen only had a transient glimpse of this new world, which led to no important knowledge of it, nor to any permanent settlement. But now I shall tell you of facts as they have actually taken place. This we call authentic history. Perhaps some of you can tell me where Christopher Columbus was born.

James.—In Genoa, Italy.

[The lesson should be given from a wall-map, and every place mentioned, carefully pointed out.]

T.—He was born in 1435. How many years ago? (Answer given.)

T.—His father was a weaver of cloth. At a very early age, Columbus showed a decided love of the sea, and so, when only ten years old, he was sent to school to learn navigation. What is navigation?

Julia.—It tells us what to do on the water.

T.—"What to do!" Is that exactly your meaning?

James.—It tells us about ships.

Lewis.—It teaches about vessels, and how to direct them on the water.

T.—Notice the situation of Genoa, and see if you can think of any reason why Columbus should have had a taste for the sea.

Julia.—The view of the Mediterranean was beautiful at Genoa, and he might think he'd like to sail over it.

Monroe.—Couldn't do anything else, because there were such high mountains on the other side of Genoa.

T.—No doubt these surroundings had an influence upon Columbus. He commenced to go upon the Mediterranean when only fourteen. His first voyages were made with a distant relative, Colombo. When about twenty-four, once, off the coast of Portugal, the vessel commanded by Columbus was burnt. The crew threw themselves into the sea. Columbus seized an oar, which was floating within reach, and swam to the shore, a distance of six miles. After this he went to live in Lisbon. There he married Dona Felipa, daughter of a distinguished navigator who had just died. The mother of his wife related to Columbus all she knew of the voyages of her late husband, and brought him all his papers and charts and journals. In this way Columbus became acquainted with the routes of the Portuguese, and sailed occasionally to the coast of Guinea, and to other ports. When on shore he maintained his family by making maps and charts, and although poor, he did not forget his aged father, for we are told that he appropriated a part of his scanty means for his father's support at Genoa. How many of you have drawn maps in the Geography class? (Every one has done this.)

T.—Do you think it was any more difficult for Columbus to draw maps, than for you? (Various answers to this question.)

T.—The people of those days thought the earth was a flat surface, with the ocean, like a great river, lying round about its edges. Were they right in thinking so?

"No ma'am," shouted a dozen voices.

T.—Columbus lived at a time when there was a passion for discovery. Islands had been found in the ocean, and voyagers supposed there were others unknown to the world. Columbus had begun to think that the earth must be round. He believed, however, that there was but one continent on the globe, and one great ocean, and that by sailing west, you would come to India and China. Gold and pearls and beautiful silks had been brought from these countries, and so the Kings of Europe would have been glad to find a shorter way thither. You know the size of the earth, and how to calculate distances upon it. Columbus did not know its size. He thought it mvch smaller than is is. But he divided it into degrees, and made calculations as to how great a portion of it is unknown. He thought it probable that the undiscovered space was filled up, in a great measure, by the eastern regions of Asia, which might extend nearly round the globe [this carefully explained], and that by pursuing a direct course from east to west, a navigator would arrive at the extremity of Asia and discover any intervening land. Was he right in this latter supposition? (Various answers given.)

Monroe.—He was right.

T.—Did he discover the intervening land?

M.—He did.

T.—What land was it?

M.—The American continent.

T.—If he had continued his course west, would he have reached Asia?

M.—Yes, ma'am.

T.—Making himself acquainted with all that had been written by the ancients, or discovered in his own time, Columbus thought and studied, and drew his maps according to what he concluded *must be.* Is that the way you draw your maps?

James.—No, ma'am. We know all about it, and just how to draw them.

T.—Yes, James, and children, you can hardly imagine the difficulties Columbus had to contend with. More than one-half the globe was entirely unknown, and few believed he was right in supposing the earth to be round. But he studied year after year, and conjectured and planned, until he matured his grand project, and so fixed was he in his own mind, that no trial or disappointment could divert him from steadily pursuing his object. So you see, children, to accomplish any great thing in life, we must work year after year. How many of you would regard five hours a long time to study one lesson? (Most of the scholars think it would be a long time.)

T.—Would any of you be willing to spend ten years in study, in order to make some great discovery, or to write a famous book, or to invent a telephone?

Several answer "I would." One little fellow thus actually reveals his ambitious tendencies: "Humph! you can learn to drive a hack in six weeks. Tom Murphy said so."

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— It is what the child does, under wise direction, that educates him.

ZOÖLOGY FOR THE LITTLE ONES.

BY CLARABELLE GILMAN.

XIV.

INSECTS. *

We commence the study of insects with the grasshopper, because it is the best type of the class, showing plainly their most important characters. We pin the grasshoppers to bits of cork or pine wood, so that they may be handled with less danger of breaking them. Pins should also be distributed to the class, that there may be no delay for lack of them when we come to the tiny mouth-parts.

Children who have studied the lobster and other animals, will at once notice the number of wings and legs, and the pair of great compound eyes. They will have something to tell about the habits of the grasshopper, and the manner in which he gets over the ground. We let them try to find any part of his body that is especially adapted to jumping, and they at once see the use of those long hind legs.

"If we had a worm here, and could examine it, should we find all the rings of its body very nearly alike, something like a string of beads?"

"Yes; a worm is all stretched out."

"Are the parts of the grasshopper's body all alike?"

"No, indeed; there's the head, and the body with the wings on it, and the tail."

"The part of the body with the wings on it is called the thorax, and the tail is called the abdomen, just as in the lobster. See whether these parts, the head, the thorax, and the abdomen, are joined tightly to each other so that they cannot be moved, or whether they are jointed so that they will move upon each other."

"The head is jointed to the thorax." "The thorax is jointed to the abdomen."

"Now you may examine the head of the grasshopper, and see how many parts you can find on it."

"There are two eyes." "There's only one pair of feelers." "There's a pair of hard jaws."

"Those are his mandibles, or strong jaws. Who knows what grasshoppers eat?"

"They eat plants."

"Out West there is a kind of grasshopper that sometimes comes in great swarms and eats up everything that the farmers have planted What do they need these sharp mandibles for?"

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* The lesson on the Spider, which in a systematic course comes properly between the Lobster and the Insect, was given in the PRIMARY TEACHER for June, 1880.

"To bite off the leaves with."

"Have you found the mouth?"

"Yes; I can put my pin into it, right here."

"Look carefully for anything else around the mouth."

"There's a little flap of skin that falls down as fast as I lift it up."

"That is the upper lip."

"I see some little hairs that look like short feelers."

"Now, with the pins try to separate the parts that have those hairs, or jointed threads on them, so as to see whether they are jointed to the head."

"I think the threads are on little flat pieces that are jointed to the head."

"Those flat pieces are the grasshopper's little jaws, and he has two pairs of them, but the lower ones have grown together so that they look like a lower lip. Now, tell me everything that we have found on the head."

After naming these parts we try to see one little eye on the front of the head between the feelers, telling the children that there is also a pair of little eyes, that are probably too small to be seen, higher up on the head between the compound eyes. But, not in the least discouraged by the difficulty of the task, one bright-eyed little girl begins to hunt for this last pair of eyes, and soon triumphantly points them out, just in front of each large eye. She has actually seen what her teacher had not before discovered on these small specimens, and has once more proved the superiority of young eyes, when properly trained, over older ones.

Next, we separate the thorax from the abdomen, in order to see that the three pairs of legs and two pairs of wings are really on the thorax. Then with our pins we carefully spread the wings, as we can do without very much difficulty, if the specimens have not been allowed to dry.

"Are both pairs of wings alike?"

"No; the upper wings are straight and not nearly as wide as the under ones, and the under ones are like a fan."

"The under wings are sometimes beautifully colored. What shall we call these lines on the wings?"

"Aren't they veins?"

"Where else have we found veins in something that we have studied?"

"There are veins in leaves."

"What is one use of veins in leaves?"

"They keep the leaves in shape, and isn't that what the veins in wings do?"

"Yes; and they are air-tubes, too, and make the wing very light, because they are hollow."

"What can you tell me about the abdomen?"

"It has seven rings, like the lobster's, but there isn't anything on them."

"There are really more than seven rings, but three or four of those at the end are so crowded together that it is difficult to make them out. Look very closely on the sides of the rings for openings like little pinholes. Those are the breathing-holes. The grasshopper never breathes through his mouth, but through his sides. These breathing-holes are the ends of tubes which connect with other tubes that go to every part of the grasshopper's body. At different places along these tubes are air-sacs, which are filled with air before the insect flies, and make him very light. After you have filled your lungs full of pure air by taking a number of long breaths, you feel light and strong. Think how you would feel if your lungs were all over you, and you had a great many bags of air in you besides."

"The grasshopper's ears are also on the forward ring of the abdomen. So he hears with his sides and breathes with them, too.

The ears are comparatively large, somewhat ear-shaped hollows, each covered with a delicate, tightly-stretched membrane, and can be seen by raising the wings.

We speak of the hooks at the end of the abdomen, used in digging up the ground before laying their eggs, and get a clue to the principal use of the sting in insects.

After several lessons spent in this study of the grasshopper, we take the beetle. Comparing this with the grasshopper, we find that the same parts can be easily distinguished. But, on the other hand, the forward pair of wings are so changed and hardened that they are no longer called wings, but wing-covers. The wing-covers, with the general appearance of the body, furnish a sure means of knowing the beetles among all the winged tribes.

Taking the bugs next, we see a marked deviation from our typical form in the mouth-parts, for in the bug four puzzling little bristles are the changed mandibles and forward pair of maxillæ, or little jaws, around which the second pair of maxillæ throw their protecting sheath. The narrow, pointed head of the true bug is another character by which we may know it from other insects often wrongly called bugs.

In the big dragon-fly, the darning-needle of the children, that looks so fierce but is really so harmless, we find a long, loose-jointed body, a head that seems in perpetual danger of shaking off, and long wings that, with their distinctly marked veins, distinguish the dragon-fly and his relatives from all other insects.

Next we turn our attention to the little house-fly. The scholars are pleased with the discovery that he has but two wings, though the place of the missing ones is supplied by the balancers, as they are called,—a pair of knobs on stalks, that are said to be necessary to the equilibrium of the fly. These show very plainly on the crane-fly. By the help of blackboard drawings we may study the mosquito, noticing his wonderful sting and finding out his relationship to the fly.

The moth and butterfly, with their beautiful wings and curious, coiled tongue, form one of the most interesting groups. The tongue is only another form of the same mouth-parts, this time adapted to sucking the nectar from flowers. But the history of the butterfly is not complete without the early stages of its caterpillar existence. The difference between the clumsy, crawling caterpillar, with its strong, plant-eating jaws, and the light, graceful butterfly, with its long, coiled tongue, cannot fail to interest the children. The change from the caterpillar to the butterfly is like a fairy tale. The butterfly furnishes the best instance of this change, but the life-history of many other insects is full of interest. The young dragon-fly, for instance. which spends its life in the water, when about half-grown is provided with a mask which unfolds into an ugly pair of jaws. With this mask drawn up over its mouth, it glides quietly through the water, apparently innocent of any evil intentions. But, let another insect approach, and quick as lightning the jaws shoot out and seize the unlucky victim.

Last, and highest of all in their wonderful social instincts, are the bees. In the mouth-parts of the bee we find the combination of strong mandibles for modeling their cells in the wax, with a sucking-tube for extracting the honey from flowers. The organization of the bees in bands of workers that render the most devoted allegiance to their queen, and make careful provision for the young, seems almost to give them a rank in intelligence among higher animals.

In this paper nothing more could be done than to sketch briefly a general plan for a series of lessons that may be expanded indefinitely. Our pupils will prove a most efficient aid in preparing for these lessons, for who better than they can chase the butterfly, catch the grasshopper, or hunt out the beetle from his hiding-place? Never mind if they do bring too many beetles and flies; they are interested, and that is the main thing.

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— The true object of education is to train the mind to such use of its own faculties, that it will work easily and accurately, and be able and willing to work all through life.—*Dr. Hall.*

A LITTLE ABOUT MINERALS.

BY H. L. CLAPP.

III.

—Having examined the specimens of quartz which you have
e to talk about during the last two or three lessons on min-
having learned their names and uses, we will now talk about

.—Why is it called feldspar?

.—Minerals which break up naturally into forms, shaped somewhat
ar of soap, and having smooth faces, are frequently called *spars*,
ldspar, from its yellow color and shape, at a little distance, might
en for a bar of common, yellow soap. That is its appearance at
uarries in Topsham, Me. Feldspar, being so common almost
where, is the spar of the *feld*, or field, and from that fact we get
ame *feldspar*.

harles.—Does it ever come as large as a bar of soap? All that I
e seen has been in little pieces in granite.

T.—At the Topsham quarries pieces of feldspar are blasted from the
ge as large as a barrel, and the ledge itself, of almost pure feldspar,
s large, at least, as a block of a dozen houses. There are many
er feldspar quarries quite as large in different parts of the world.

John.—What is a quarry?

T.—A place where men get out stone by drilling and blasting.

James.—When you told us about granite, you said feldspar was quite
, and now you say it is yellow. Has it any other color?

T.—Yes; sometimes it is of a fine green color, and then it is called
ason-stone; often it is white, but most frequently yellowish.

James.—Is it used for anything?

T.—For a great many things, as you will soon learn. You all use it
changed form three times a day, probably every day in the week.
t makes you smile and look curious. Who can tell me what I am
king about? Well, John?

John.—Dishes.

T.—Right. Now, which of you remember what you have heard your
nts call the dishes?

pils.—Porcelain, china, stone-china, crockery-ware.

T.—Excellent. Now, think how many pieces of crockery-ware each
of your mothers has, then how many mothers there are in the
who use crockery-ware, and then you may get an idea of the great
[illegible] of feldspar.

Charles.—Please tell us how dishes are made.

T.—To describe the entire process would take too much time, but the most important parts of the process may be mentioned. Beds of feldspar are decomposed or rotted by long exposure to the weather, when the feldspar crumbles to a very fine powder, and it is then washed to free it of coarse pieces or particles of quartz. The powder looks like yellowish clay, and is called *kaolin*, which can be made to take almost any form. Formerly the best kaolin was found in China, and the dishes made of it were called china-ware. To prevent the clay from cracking when in the furnace, ground flint is mixed with it. The whole is worked together thoroughly, in the same manner as dough is kneeded, and permitted to lie six months or longer; and the longer it lies, the less liable it is to crack, and the better in color it becomes. When it is formed into the required shape, it is baked in a furnace or kiln about forty hours. At the feldspar mills in Topsham the feldspar is ground to a very fine powder by several immense grindstones.

Robert.—What makes dishes so smooth on the outside? When one is broken, it is rough where it breaks.

T.—The smooth surface on stone-ware is called a *glaze*, and is made by throwing salt into the furnace when the ware is sufficiently hot. Porcelain glaze is made of flint, powdered and mixed with water so as to look like cream. With slight changes all kinds of crockery-ware are made in the manner described.

Frank.—Are stone jugs made of the same stuff?

T.—Yes; and I may add the common nappies, or yellow pudding-dishes, and the beautiful Parian statuettes, which are made by Messrs. Minton & Copeland out of kaolin, soft feldspar, and bones, but without glaze. Unglazed porcelain is called *biscuit*.

John.—My aunt has a statuette of Apollo which cost $17, and it is only a liitle more than a foot high. What makes it cost so much?

T.—The statuettes are cast in moulds, in a number of pieces, and since the process of firing contracts the size to the extent of one-fourth, great skill on the part of the workmen is called for; and, besides, the statuettes are very liable to crack or get damaged in firing. About one-third are thus damaged. Who has seen any painted china dishes?

Reuben.—My sister painted some for Christmas presents, with flowers and butterflies and things, and then had them burned so that the paint wouldn't wash off.

T.—Very good; you now see how very useful feldspar is. Now I will write on the board the names of the things which we have talked about; and before we talk about these things again, perhaps your mothers will permit you to bring in some pieces of crockery-ware for us to look at, and I will bring in some of the most valuable things which have been mentioned.

Feldspar, — spar of the fields. *Amazon-stone*, — green feldspar,
Kaolin, — powdered feldspar. *Glaze*, — made with salt.

Uses of Feldspar:
- *Porcelain* or *China Ware.*
- *Stone-china* or *Crockery-ware.*
- *Statuettes* or *Minton-Ware.*
- *Jugs*, *Teapots*, *Nappies.*

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WRITING-LESSONS FOR LITTLE FOLKS.

BY LYMAN D. SMITH.

IX.

THE NEXT STEP.

"What letter is this I have written on the blackboard?" The class recognize small *n*. "Jennie, how do you know that this is *n?*" She is at a loss to answer, but Charles is eager to tell me that he knows *n* by the two straight lines. "But the letter *u* has two straight lines. How do we know *n* from *u?*" Bessie's eyes sparkle with an idea. "How do you know *n*, Bessie?" "By the turns at top." "The turns strike the eye at once. But the letter *m* has turns at top. How are we sure that this is *n*, Frank?" "Because it has two turns at top." "Right! The letter is just like two tiny waves, and the two short turns at top are where the two tiny waves roll over. Your hand makes two over-rolling movements to write *n*," illustrating this by simple hand-motion. "The waves roll under when you write *i*, *u*, and *w*," illustrating this also by simple hand-motion. I next make a series of each kind of waves on the blackboard: "See the over-rolling waves! Now look at the under-rolling waves!" The children are all quick to gain the idea, and are eager to make these waves. You can be assured that after this lesson they will all be writing wave-series on their slates, on slips of paper, and wherever they have a chance to practise them. Their interest will not only be awakened, but they will have a good movement exercise.

"Now look sharp at this *n* on the board. Robbie, where do the waves meet?" "At the bottom." "And then, Robbie, the second wave rolls right away from the first one. Does the second wave run clear down to base, just as the first one does? Gracie may answer. "No, there's a short turn." "What is the use of this turn at base?

Can any of you tell me?" The little folks are all silent. "Why, how much easier this short turn makes it for your hand to run right up with the right-curve! We couldn't spare this little turn out of the letter. You must write it very short. You just want to keep from making a point. What is the use of this last curve? The two waves alone would make a good *n*." Alice thinks it is put on for looks. Edgar says that this curve has to be there to join *n* to other letters. I call upon the class to decide, and all think Edgar is right about it. This last curve is a joining line, but it also adds to the grace of the letter. I am glad that you are learning to think about the letters.

"How many waves are there in *m*, Annie?" "Three waves." "The beauty of *n* and *m* is in having the waves all rise in gentle curves to the same height so that they will have one look, or be uniform. If the waves do not roll in the same direction, they will not please the eye," illustrating this fault on the board. "They must roll over in the shortest turns, and fall on the right-slant to base. The waves must not roll together, but must separate from base. You have to think and write, think and write, to make beautiful letters."

The children now have some ideas to work upon, and can trace and write the *n* and *m* lessons in their lead pencil books.

LESSONS IN DRAWING.

BY MARY D. HICKS.

III.

LESSONS IN FORM, FROM SOLIDS.—DRAWING, MOULDING.

Sketches of lessons in form from solids were given in the February number. The order of a lesson from the solid was then given as follows:

1. Review.
2. Observation $\left\{\begin{array}{l}\text{by the eye.}\\\text{by the hand.}\end{array}\right.$
3. Term or name given.
4. Drill.
5. Application.
6. Drawing and moulding when practicable.

It is almost always practicable to give a short exercise in drawing just at the close of a lesson from the solid. The children should draw directly from the solid, and not from the teacher's representation of the solid on the board. The drawing should be purely imitative, and as simple as possible. If the lesson is on a sphere, the children may draw something that looks like the outline of a sphere. The teacher may place a number of spheres side by side, and the children may draw from the row of spheres, making, of course, only the outlines. If the lesson is from the cube, the children may draw one face of it only, making no attempt at a drawing of the appearance of the whole cube.

I saw, not long since, a lesson in drawing given from the cube which revealed to the children the essentials of its form in a very pleasant way. It was given from an alphabetical cube, and followed a short lesson in observation of the cube by sight and touch. In the course of the observation the children observed that the cube had plane faces; they also knew a square by sight, and were therefore ready for the lesson which followed.

"Now, children, look at this face of the cube. Tell me what its shape is." 'A square."

"Good. In the upper left-hand corner of your slate you may draw this face, and you may make it just as nearly the size of this face as you can. You have drawn it? Well, I will make a cross on it with the chalk. John, come and find another face. What is the shape of this face?" "Square."

"And is it larger or smaller than the face which you have just drawn?" "Just the same."

"Very well. You may draw this face beside the other, and of just the same size. You have drawn it? Now I will mark this face with a cross."

Mary then found another face; the children drew it, and the teacher marked it. In this way the six faces of the cube were drawn. The teacher passing up and down the aisles, putting the block on a square on each slate, each child noting the size of the block and the size of the squares. The children counted the squares and found that there were six. Thus they learned through observation and drawing combined, that a cube has six plane, square faces.

But there is another way of becoming acquainted with a solid, and a sure test of knowledge of its form; the solids may be moulded in clay by the children. This has been long in successful practice in private kindergartens where a teacher has but ten or a dozen pupils, but it has been considered by many to be impracticable in the large classes of public schools. It has been proved, however, by continued experiments, that modeling in clay can be taught by class-instruction, and therefore can be introduced easily into public-school classes. The outfit needed is very simple,—an earthen jar, a mass of clay, a case-knife. The clay should be kept moist in the jar. When it is needed for class-work, the teacher takes out on a slate a mass containing about as many cubic inches as there are children in the class, and divides the clay into small masses about an inch in diameter. These are quickly distributed, a small mass of clay being placed on the slate of each child. The children are now ready for the lesson.

The teacher takes a mass of clay, and holding it carefully between the two palms, rolls it gently and skilfully. She turns her fingers backward so that the palms may be as flat as possible, and rolls lightly and rapidly. The children watch her, notice how she holds her hands, how she holds her fingers, how she rolls the clay till under her touch it becomes a beautiful ball, round and smooth. She lays the ball where all can see it, and taking another mass of clay and rolling it, tells the children they may try to make round, smooth, beautiful balls of their clay. The little hands take the clay and roll it as well as they can; little fingers turn back in imitation of the teacher; the masses become rounder and smoother. At a signal from the teacher, the children place their balls upon their slates. The balls are not all round, to be sure, but they will be rounder next time. Little hands are soft and supple, and are easily trained.

The teacher selects from the work of the children those which are the best and places them on her desk to be kept until another lesson. The other balls are gathered and taken to the teacher's desk to be added to the clay remaining there. (Later, all this clay will be moistened and wedged together by being thrown repeatedly on a hard surface, and then placed in the jar again for use another day.) A monitor with a moist sponge passes down each aisle, sponging the hands of each child, and afterward the slates; and the lesson in modeling is over without any other labor than this.

A cube is made from a sphere by gently dropping a sphere three times,—one, two, three,—on the slate; and then turning it, dropping it three times again,—one, two, three,—on the opposite sides; and so on until the six faces are made. With practice, children make cubes with such sharp edges and corners and such square faces that they are a delight to behold.

A cylinder or a cone is made by dropping and rolling an oblong block, or a pyramid or a triangular prism, by dropping.

As the children become skillful in manipulation, they may make little objects from models before them, the teacher leading them to careful observation; they may also make objects from memory.

There is always a delight in creation; "clay day" is a day of creation to the children,—a day which they always hail with joy.

A Certain Cure.—The first thing to do in the spring is to clean house. For internal cleansing and renovating, no other medicine is equal to Kidney Wort. In either dry or liquid form it cures headache, bilious attacks, constipation, and deranged kidneys. See advertisement.

EDITORIAL.

One of the important advantages secured by a wise application of correct methods of elementary training is the *saving of time* to the pupils. Some enthusiastic advocates of *new methods* make, it is true, most absurd statements in regard to the gain in time by the adoption of the so-called "objective" or "oral" methods of instruction. The claim that by using a certain method "as much can be done in *one* year as is commonly done in the average schools in *three*," needs practical demonstration to make it clear. We are certain that great improvements have been made, and know well that much remains to be done to elevate the standard of primary teaching, which will save time and diminish the expense of elementary training. Careful observation of the new popular methods of work in the schools for young children leads us to fear that an immense amount of time and effort is expended in teaching children *what they already know.* Drill exercises are frequently given upon objects day after day, which are so familiar to the pupils that the exercise does not awaken any interest, or stimulate any habits of attention or investigation, which are really the important elements in oral instruction. The oft-repeated talks about "the cat," "the dog," "the hat," "the rose," etc., in many primary school-rooms, have become as objectionable, and of as little profit as the old system of concert recitation of the tables in arithmetic It is a safe rule for primary teachers to follow, that when pupils show signs of weariness or a lack of interest in any exercise, it is time to change it for something that will arouse the mind to action. Any work done that does not tend to develop the power and capacity of the child in some direction is time and effort misapplied.

So we urge upon teachers of young children to conduct their school exercises in a lively, cheerful manner, and always have *something new and fresh* to bring to the attention of the pupils. Even the dry facts of knowledge will be much longer retained if taught in an animated, brisk style. Activity is the law of childhood; and in cultivating the faculties it is necessary to begin with the senses, and stimulate the powers of investigation, never telling children what they can be led to discover for themselves. It is necessary, also, to proceed step by step, thoroughly, and every lesson should have some new point which will develop the mind, and help either directly or remotely to furnish it.

"To rear, to teach,
Becoming as is meet and fit,
A link among the days to knit
The generations each with each."
Tennyson.

On page 271 of THE TEACHER of this month will be found an offer made by the publisher, which will afford teachers the opportunity to secure a fine colored picture of Longfellow's Home at Cambridge, Mass. Nothing could be better as a means of interesting pupils in America's greatest living poet, and it will be found an ornament in the school-room or home. Prompt orders will secure the picture for use on Longfellow's birthday, Feb. 27.

Books for Primary Teachers.

(Continued from February Number.)

READERS.

Agpleton's School Readers. First Reader, 23 cts. Second. 37 cts. Third, 48 cts. Fourth, 64 cts. Fifth, $1.15. D. Appleton & Co., N. Y.
Lippincott's Popular Series of Readers. First Reader, 17 cts. Second, 28 cts. Third, 37 cts. J. B. Lippincott & Co., Philadelphia.

READING CHARTS.

Edwards & Webb's Primary Reading Lessons. (Eight Charts, 20x25 inches, mounted). Per set $3.60. Taintor Bros., Merrill & Co.
Hillard's Reading Charts. (Eight Charts, Four Tablets.) Per set $3.60. Taintor Bros., Merrill & Co.

NATURAL SCIENCES.

The Fairy Land of Science. Buckley. $1.50. D. Appleton & Co.
Life and Her Children. do. $1.50. do.
Ocean Wonders. Damon. $1.50 do.
First Book of Botany. Youmans. 85 cts. do.
First Book in Zoology. Morse. $1.10. do.
Guides for Science Teaching,—Common Minerals and Rocks. W. O. Crosby. Ginn, Heath & Co., Boston.

METHOD MANUALS, ETC., ETC.

March's A-B-C-Book. Prof. F. A. March. 25 cts. Ginn, Heath & Co.
Calkins' Pr. Object Lessons. $1.00. Harper & Brothers, N. Y.
  Manual of Object Teaching. $1.25. do.
Art of Speech. 2 vols. Townsend. Each 60 cts. D. Appleton & Co. N. Y.
Art of School Management. Baldwin. $1.50. do.
Education. Spencer. $1.25. do.
School-Room Exercise-Book. DeGraff. 15 cts. do.
The English Language and its Early Literature. Gilmore. 60 c. do.
Health and Education. Kingsley. $1.75. do.
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Lesson on Kindness to Animals.

LESSON VIII.—THE BIRDS.*

(Continued.)

[To be read to pupils by Primary Teachers.]

It has been said that "if there were not a bird in broad Scotland, yet her hills and valleys would echo the music of her maidens, singing the sweet melodies of her own Robert Burns."

But that is not true; for if there were not a bird in broad Scotland the insects that birds feed upon would eat up the vegetation, the country would become a desert, and so not a maiden could live in broad Scotland.

A learned Frenchman, named *Michelet*, who has studied a great deal about birds, says that "*if all the birds were destroyed, men could not live on the earth*," because the insects which birds feed upon would become so numerous. Some of our little birds eat thousands of caterpillars and other small insects in a single week. A single little bird which a thoughtless boy may shoot would, if permitted to live, have destroyed perhaps more than a hundred thousand insects; and every egg taken from a little bird's nest, makes one bird less to destroy these insects.

In America, I am sorry to say that little birds are becoming more scarce, and troublesome insects are becoming more numerous. In new countries, where men and boys have not frightened the birds away, they let us go close up to them and see how they make their cunning nests, and how they feed their young, and how they teach their little birds to fly. Mr. Ruskin, a famous Englishman, much loved by his countrymen, says (in substance) that it is his fondest wish to make English boys and girls kind to the birds. And it looks as though he would have his wish, for "The Dicky Bird Society," about which I told you in my first lesson, has now more than thirty-seven thousand boys and girls who are members of it, and each has promised to try to get orher boys and girls to join it.

You remember *Thoreau*, about whom I also told you in my first lesson, and how kind he was to the birds, and how they would fly onto his shoulders, and even on to his spade when he was digging. I saw in the city of Paris, in France, a few years ago, in one of the great public gardens, a man who had been so kind to the wild birds there that they would light on his hands and feed from his fingers. In the city of Venice, in Italy, the people feed the pigeons every day at noon, in the great public square of Saint Mark, and when it is near the hour of noon, you will see the pigeons flying from all parts of the city, over the roofs of the buildings to be fed. It is a crime in Venice to harm a pigeon.

Some people wonder where the birds go to in winter. They forget that birds have wings, and some of them can fly farther toward warmer climates in one day than we could go with horses and carriages in a week. It is said that swallows can fly sixty miles an hour, and that one bird, called the "*Frigate-bird*," can cross the tropical Atlantic Ocean in a single night. Some of these birds have most beautiful plumage, which we should constantly admire if we treated them kindly as Thoreau did, so that they would come near us. And some of them have songs so beautiful that one good man was led to say, "Lord, what music hast thou provided for saints in heaven, when thou givest such sweet music to men on earth!"

---

* By GEO. T. ANGELL, Esq., President of the Mass. Society for the Prevention of Cruelty to Animals.

Some years ago, an Englishman was coming down the River Nile, in Egypt, on a large boat loaded with grain, and the birds came off from every village and eat the grain piled on the deck. The Englishman asked the Egyptian captain of the boat, "Who owns this grain?" and the Egyptian captain said, "I own it." Then the Englishman asked him why he let the birds eat up the grain. Then the Egyptian asked the Englishman, "Who made the birds?" and the Englishman answered, "God." Then the Egyptian asked whether grain was a food which God intended birds to eat; and the Englishman said it was. Then the Egyptian said, "Let them eat and be satisfied, for God in his goodness has provided enough for all his creatures."

It is very wicked and cruel to kill or wound these little birds that are so useful and sing so sweetly, and enjoy life so much; and it is still more wicked and cruel to kill or wound them in spring-time, when their little nests are full of young that may starve if the mother-bird is injured; and it is just as cruel to catch them, and keep them in little cages away from all *their* friends and companions, as it would be for some giant to catch little boys and girls, and keep them in little cages away from all *their* friends and companions. But this is not true in regard to such tame birds as canary-birds, which have never been free. If they have kind persons to care for them, and good cages, and plenty to eat and drink, and are protected carefully from the weather, and perhaps permitted to fly about the house an hour or two each day, they may be very happy. I usually let my canary-bird fly about my house several hours a day, and he will fly to my fingers when I call him; though he rather prefers to fly to the top of my head, and play with me there. When I do not want him to sing I put a little mirror in his cage, taking care never to let the sun or lamp shine in it so as to dazzle his eyes, and he will look at himself for hours together, and keep as quiet as a mouse.

If you think that birds don't understand you when you speak kindly to them, you are mistaken. Two or three years ago, a good lady whom I know, near Boston, had a canary-bird that she loved very dearly, and had never spoken to unkindly. But one day she came home to dinner very late, and her husband, — an excellent man, who had been waiting for her a long time,—spoke very crossly as good men sometimes do. Just then the bird began to call to her, and to make her husband ashamed of having spoken to her so crossly. She spoke to the bird in the same way. A few minutes after she heard a fluttering in its cage, and when she went to it the bird was dead. Birds know a great deal more than some folks think they do. They knew when *Thoreau* spoke kindly to them, and they know when others speak unkindly.

I think no one ever feeds the birds, or does any other kind deed for them, without feeling happier, and being made better by it. If you don't believe what I say, try it.

Walter Von Vogelweide, the great lyric poet of the middle ages, so loved them that he left a legacy to the monks of Wurtzburg, on condition that they should every day feed the birds on the tombstone over his grave.

SOME QUESTIONS.

[Others to be added by teachers.]

What has been said of Scotland, and why is it not true?

What did Michelet say about birds?

What do some of our little birds eat?

What is said about birds and insects in America?

What is said about birds in new countries?

What did Mr. Ruskin say about birds?

How many members does the "Dicky Bird Society" of England now have?

What can you tell about Thoreau?

What about the birds in Paris?

What about the pigeons at Venice?

Where do most birds go in winter?

How fast can they fly?

What has been said about the beautiful songs of birds?

What can you tell about the Englishman coming down the Nile?

Why is it more wicked to injure birds in spring-time?

What is said about catching wild birds and keeping them in cages?

What is said about tame canary-birds?

What can you tell about the canary-bird at Chelsea, Mass?

Do birds understand when you speak kindly?

What is said about Walter Von Vogelweide?

OUR NOTE-BOOK.

SCHOOL PASTIMES.

WORKING FOR OTHERS.

It was perhaps a month before Christmas, when, noticing how highly the children prized an old scrap-book kept in the school-room, I suggested to them that we should make some new ones; we would have the enjoyment of making them, and when they were done we would send them as Christmas gifts to the "Children's Hospital." I said to them, "There are little children there who cannot run and jump about as you do; they must lie in bed a long time; some of them will not be well enough to walk for many weeks, and some, perhaps, *never* can walk. Some are so sick they do not care to play, while others are too weak to play with the toys kind friends have sent them. We will make them some picture-books as bright and pretty as we can, and all who would like may help."

All who could brought blunt scissors, old illustrated papers, discarded picture-books, etc. I provided as my share a quantity of pink, red, light and dark blue cambric, to form the books themselves, thinking they would be lighter to hold, and stronger and more lasting than paper books. After cutting the cambric into leaves, I stitched them firmly through the back; and when I had provided two or three bottles of mucilage, we were ready for our work.

I usually reached the school-house at half-past eight in the morning; and finding many of the children eager to come at that hour, met with them each morning for the work. At first we confined our attention to cutting out the pictures, discarding any that we thought might be disagreeable or uninteresting to the children. I then selected four of the older children to arrange the pictures in the books, after they had been selected and prepared by others whose work it was to moisten the edges with mucilage. Much interest was shown by the children who were cutting out the pictures, that the books should be equally pretty. Often a child would hold up a picture, saying, "This will just fit in Mamie's book;" or, "Here is a nice picture for Helen's book." Patiently the little fingers worked morning after morning; and as they became more and more familiar with the work, I allowed the children of one division to work occasionally during school-hours, while I was occupied with the other division's lesson. A day or two before Christmas, our four books were finished and sent to the hospital, and great was the delight of the children when we received a kindly note from the matron in answer, expressing her thanks and the children's for the beautiful books we had sent them, which were an unfailing source of delight.

PRIMARY SCHOOL.

MY STATUES.

[Written, upon seeing a statue of Maud Muller by Blanche Nevin.]

BY M. D. MC HENRY.

She carved from the pure white marble,
  A beautiful girlish form,
The face so sweetly expressive
  Freedom from earth's rough storm.

She can carve for future ages,
  To last while the marble lasts,
When she, whose hand has formed it,
  Is numbered with the past.

Hundreds will gaze upon it,
  With looks of praise or blame;
Her name will be known to thousands,
  Wide-spread will be her fame.

* * * * * *

A feeling of sadness came o'er me,
  As I gazed and thought. Alas!
What that *I* ever accomplish,
  Will like this marble last?

Then, I thought of the little creatures
  Whose minds I have to train,
The souls to be intrusted
  That they may knowledge gain.

And a song of praise ascended
  From my heart of hearts that day,
That God to me had given
  The labor for which I prayed.

Like marble to the sculptor,
  So these souls are to me;
Oh! grant my heavenly Father,
  That I may *carve* for Thee.

May each of these living statues
  Receive from my hand alone
Those strokes that will make them
    better,
  And prepare them for Thy throne.

Then my work will last the ages;
  To Thee, *all* glory be,
For all in Thy hand are lying,
  The master-strokes are from Thee.

WE have recently enjoyed the pleasure of a visit to (and through) the establishment of Mr. E. B. Benjamin, importer and manufacturer of Chemical and Physical Apparatus, at No. 6 Barclay Street, New York City, running through the deep block and having a frontage also at No. 12 Vesey Street. In the short time at our disposal we were not able to do much more than get a general idea of the resources of this vast establishment.

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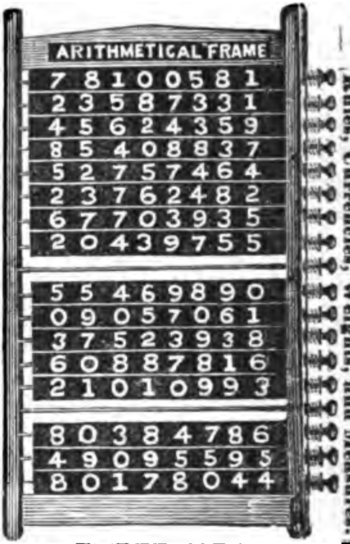

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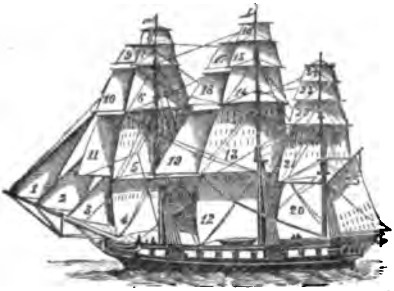

1, flying jib; 2, jib; 3, fore-top-mast-stay sail; 4, fore-course; 5, foretop sail; 6, foretop-gallant sail; 7, fore-royal; 8, fore sky-sail; 9, fore-royal studding sail; 10, foretop-gallant studding-sail; 11, foretop-mast studding-sail; 12, main-course; 13, maintopsail; 14, maintop-gallant sail; 15, main-royal; 16, main sky-sail; 17, main royal studding-sail; 18, main top-gallant studding-sail; 19, maintop-mast studding sail; 20, mizzen-course; 21, mizzen-top sail; 22, mizzen-top-gallant sail; 23, mizzen-royal; 24, mizzen sky-sail; 25, mizzen-spanker.

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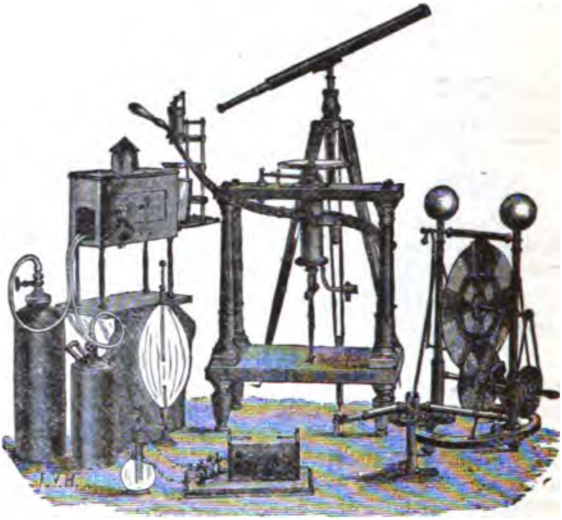

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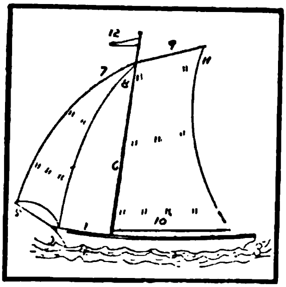

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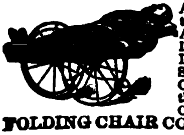

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THE
PRIMARY TEACHER.

VOL. V. APRIL, 1882. NO. 8

OBJECT - LESSONS.

BY WILLIAM M. GIFFIN, TRAINING SCHOOL, NEWARK, N. J.

The *object* of all object-lessons should be to form habits of attention and careful observation; to exercise, develop, and improve the senses, those avenues to the mind by which it gains a knowledge of the exterior world. Hence, the teacher should conclude which sense she desires to improve, and govern herself accordingly, conducting her lessons in such a manner as to secure the pupil's attention. This can be done by first arousing their curiosity, thus awakening a desire to gratify the mind with new information. The attention cannot be gained if the teacher does all the talking. She should, when possible, call upon the children to do something that has reference to the lesson, by using their slates and pencils, or hands; calling on them often to recite, telling what they see, know, or what they have been doing. Always begin with what they *do* know, and lead them to discover that which they *do not* know about the subject. If the teacher desires to train the sense of feeling, she should prepare a lesson that will cause the pupils to exercise this sense. She can fasten a piece of sandpaper, glass, tin, sponge, iron, pin, nail, etc., on a strip of board, having the pupils touch the different objects, comparing them one with another, telling in their own language what difference they find; bringing out the idea of hard, soft, smooth, rough, pointed, sharp, blunt, and many other important facts. Let the pupils stand with their hands behind them, that the teacher may touch them with the different objects, having the pupils name which object it is. Ask the pupils what they learned about the glass by touching it. They will say, "We learned that it is smooth." The teacher may then have each pupil name something else that possesses this quality. Proceed in the same manner with the other objects.

To train the sense of sight, the teacher should have a box of forms. Hold one of the forms before the pupils. Lead them to observe it and describe it as well as they can, the teacher then telling its name

When they can tell the names of the objects, and also the names of other objects having the same general form, require every pupil to bring each day something he has discovered, having the pupils name its shape, and compare it with some known form that it most resembles. They will soon learn to walk with their eyes open,—on the lookout for something new.

If the lesson is on color (also training the sense of sight), illustrate with colored objects, such as cards, cubes, paper, cloth, ribbons, etc., teaching the primary and six most common colors first. After they know these, and can tell them at sight, obtain some small bottles of paints of different colors, and use them before the class, that the pupils may see results; the teacher, by dropping a little of the blue paint on a small piece of glass or paper, and then dropping a little of the yellow paint and mixing them, produces a very good green. The teacher should endeavor to cultivate the tastes of the pupils as to what colors best harmonize, etc.

The next in order is the sense of hearing. To develop this, the teacher may have a bell, bowl, glass, piece of wood, tin, stone, etc., the teacher striking them each in turn. Lead the pupils to notice the difference in sound and tone, after which, have the children close their eyes, the teacher strike one of the objects and ask who can tell which it is; or she may lay something between the objects and the class, and strike objects one at a time, and call on different pupils to name which object was struck. After a few lessons there will be a decided improvement. The teacher may now sing the first three tones of the scale with the syllable *la*, having the pupils give the numeral or syllable name of the tones. Next, sound the first, third, and fifth; then the then the third, fifth, and eighth. If she has a piano or an organ in her room (and if not, she can buy a metalophone for ninety-eight cents, which will answer every purpose), she can strike any of the tones of the natural scale, having the pupils write on their slates the numeral names of the tones as fast as she strikes them (slowly at first, until they are able to do it more rapidly). Perhaps in the eighth lesson of this kind she may give the following: 1, 1, 2, 2, $\underline{3}$, $\underline{2}$, 3, 3, 4 4, $\underline{5}$, 5, 5, 6, 5, $\underline{4}$, $\underline{3}$, 2, 2, 3, 2, $\underline{1}$. After striking the last tone, call on a pupil to read what he has written. If most of the class is right, ask the pupils to underscore as above. Then have the class sing what they have written, holding on to the tones that are underscored; when, to their surprise and pleasure, they find they have written a tune. Teacher may have the children sing the following verse to the same tune:

From the far blue Heavens,
Where the angels dwell,
God looks down on children,
Whom he loves so well.

The class has had a valuable object and music-lesson to-day. I therefore suggest that the teacher take the music period to teach her class the thunder-shower described in the PRIMARY TEACHER for June, 1881. I have tried it, and know it will please the children very much. It will be improved, by the way, to have one of the boys use a "buzzer" (a flat stick tied to a string six or eight inches long), which, when whirled rapidly, gives a good representation of the wind.

The first few questions in all object-lessons should be on something with which the pupils are familiar, — something they have had in a prior lesson; when possible, illustrating in order that they may see something they have already learned, will help them the better to understand the present lesson. To give a lesson on water, one might begin as follows:

Teacher.—What is this I have in my hand? *Class.*—An apple.

T.—What am I doing? *C.*—You are peeling the apple.

T.—What now? *C.*—Taking out the bud?

T.—What now? *C*—Taking out the stem.

T.—What now? *C.*—You are dividing it into halves.

T.—What now? *C.*—Taking out the seeds and core.

T.—What is this? *C.*—The pulp of the apple.

T.—What have I been doing with the apple? *C*—Dividing it into parts.

T.—How many parts did I find? *C.*—Seven parts.

T.—Right! What is this? *C.*—A glass of water.

T.—Who can tell me something about it? [All hands raised.]

T.—You may answer in turn, as I call on you. *Cleon.*—Water is a liquid. *Jennie.*—Water is transparent. *Milford.*—Water has no color. *Olive*—It has no smell. *William.*—It is tasteless.

T.—Is it natural or artificial? *C.*—Natural.

T.—Is it always a liquid? *C*—Yes sir. *Cleon.*—O, no sir! Sometimes it is ice.

T.—Right. What would we then call it? *C.*—A solid.

T.—Is it ever anything else? *Jennie.*—Sometimes it is steam.

T.—What would we then call it? *C.*—Vapor.

By questioning. the teacher may now have the children tell the kinds of water, the forms in which it is found,—lakes, rivers, etc.; the use it may be put to on account of the qualities it possesses.

T.—How many parts had the apple? *C.*—Seven parts.

T.—How many parts has water, Willie?

Willie.—Only just one part; it is just water.

T.—How many think so? [All hands raised.] No, that is not true. It has more than one part, and can be divided into its parts as well as an apple. What am I doing now?

C.—Cutting the water with a knife.

T.—Into how many parts do I divide it?

Olive.—Into no parts; you cannot cut it into parts.

T.—Who can tell how to divide it into parts? I see no hands raised. As you cannot tell me, I will tell you. It is done with electricity. Who knows what electricity is?

Cleon.—It is what people telegraph with.

Jennie.—People make the electric light of it.

T.—Very well; they also use it for many other purposes, one of which is to divide water into its parts. Look at this drawing on the board. We have here at the left hand a glass containing water; in this, two tall tubes of glass filled with water and inverted; from the glass two wires are passed over to a galvanic battery. Electricity is passed from the battery through the wires to the glass. I do not expect you to understand how this is done. The water is gradually used up and little bubbles of gas rise into the two glass tubes, taking the place of the water. When the tubes are filled, they look the same as they would if filled with air. If we take one of these tubes and turn it with its mouth upward, and hold a lighted match just over the mouth,—listen! See! *Bung!* The gas exploded and burned. It was not air; it was hydrogen.

T.—What do you know about hydrogen?

Willie.—It burns like powder.

Jennie—Goes off like a pistol.

T.—Yes, and that is the reason we know that it is hydrogen, because it explodes and burns. What is this I have in my hand?

C.—A clothes-pin.

T.—What am I doing? *C.*—Lighting it with a match.

T.—Does it burn very fast? *C.*—No sir.

T. (*Holding a bottle in his hand.*)—Olive may come and smell of this bottle, and see if she can tell me what is in it.

Olive. (*Smelling.*)—Kerosene oil.

T.—What am I doing with the oil?

C.—Pouring it on the clothes-pin.

T.—I will now light another match, and we will see what will happen. What does happen?

C—It burns better.

T.—Yes, children. And this is true of the other gas that we find in water. Things burn better when we put them in this gas than they do in the air. In fact, some things that will not burn at all in the air will burn with great splendor in this gas which we call oxygen. Children, think of it. The parts of water are hydrogen, which explodes and burns, and oxygen, which makes things burn better; and yet we use water to put out fire. What a *wonderful* thing for us to think about!

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Of all the books which, with a little ingenuity may be made entertaining and instructive to the children, and one which combines speller, reader, arithmetic, geography, and zoölogy all in one, is *P. T. Barnum's Illustrated News*, for advertising his "Greatest Show on Earth!" How their little eyes will stick out,—particularly if they have been to the circus,—as mamma reads with all the enthusiasm and rhetorical effect she can command, and with which the fitly-chosen words inspire her, of his "Wonderful Egyptian Jugglers," of his "Six Coal-black Trakene Stallions," his "School of Live Sea Lions," his "Gigantic Black Rhinoceros," his "Educated Elephants," etc.! How the little children will love to spell the words; find out the geographical places on the map from which the different animals came; to count the plumes on the heads of the "Six Coal-black Trakene Stallions," and find the elements of the multiplication-table in the multiplied legs, tails, ears, and noses of the horses, camels, and elephants!

But think of the pleasure and profit to be derived by the children from the "grown-up" books left carelessly around by older brothers and sisters, or intentionally by mamma,—who knows how thoroughly children enjoy looking at books that do not belong to them specially, and the perusal of which they will often be glad to intersperse amid their wilder games. Even *Hitchcock's Physiology and Anatomy* may not come amiss with its many illustrations, and may give them an idea of the wonderful structure of the eye and of the ear; and teach them of the lungs, of the heart, and of the stomach, if mamma, busy with her sewing, will only take pains to follow them in their childish wonder and curiosity, and throw in timely explanations. How fruitful of impressions worth the planting may *Warren's Physical Geography* be, with its pictures of snowflakes, hailstones, whirlwinds, waterspouts, of "Dr. Franklin's Experiment with Electricity;" the pictures in Botanical Geography, Zoölogical Geography, and Ethnography! But to create an interest in the future study of geography, we know of no book equal to *The World*, by Mary Hall. No home or primary school should be without it. In it the details of geography are told like an interesting story, and if mamma will once in a while read this it will greatly facilitate the future study of geography.

In teaching the first principles of arithmetic, how the buttons on the children's boots, the rounds of the chairs, the knobs of the bureau, the figures on the carpet, and above all, the money collected in their little banks, will furnish the apparatus! How easily and naturally will they thus learn to add, subtract, and multiply! How dearly they will love to do their sums on their little slates! What if they haven't learned to make their figures correctly, and can only make a figure 5 by turning the slate upside down and making a 2 and then turning it back again? Let them "do their sums" as early as they take a fancy, and correct figures will soon follow.

What a grand opportunity for throwing some light upon spelling is the old-fashioned game of "Come-as-you-come"! What delightful, jolly times mamma and the children can have over it, particularly if little brother Tot should give "M." for "something in mamma's work-basket," and when all have tried to guess, and had to "give up," the word should prove to be "emery"!

What valuable hints may be gathered from the "Flower-lessons," in THE PRIMARY TEACHER, with their peeps into the science of botany! Was there ever anything written for children so well calculated to inspire then with a love for botany? And why may not mothers, as well as teacher, study the little flowers with the children?

The table-talks, too, that mamma and papa will hold with each other may not be unproductive of good for the children, as they discuss the topics of the time, gathered from their newspaper readings, and find themselves willing and ready to answer the interposed questions of the children. And, too, why not have talks about the articles of food on the table,—where they came from; and even the dishes and table-linen,—what they are made of?

Is there not something concerning the furniture of the room, or their clothes, which may interest them and teach them something? Just see how pleased they will seem when you tell them that huge trees of the forest were hewn down that their house might be built and furniture made. Why, Tot's little faded gingham apron will brighten up with a new interest for him, when you tell him that it is made out of cotton, a plant that grows way off in the Sunny South. His little red stockings will possess a warmer glow when he learns that the little sheep furnished the wool for them. Mamma's silk dress will shine with a new luster when he is told that it is made from the cocoons of caterpillars. And, too, his little half-worn boots, that before were "nothing but old boots," will hold a much higher place in his estimation when he learns that a little goat or calf gave up his skin to make them.

We have mentioned only very common-place things, we know, a few of the most common things around us in all our homes; but they are only common to us because we have known them so long; they are miracles to the children, and the learning of them gives the children joy. Then why should they be snatched up from the every-day road of commonplace things, and be forced to whiz past them as past the houses, fences, and trees from the windows of the fast going train, in our eager desire to hurry them on to far-distant points?

Oh, that our houses were all of them kindergartens, where "Welcome children!" might speak from every bright, uncurtained window-pane, every breadth of much used carpet, and every piece of well-worn furniture; where the children might learn, and love to learn, and yet be free, be natural, be happy!

Oh, that the whole world were a kindergarten, where every day did not find us amid the vexing complexities of a civilized whirl, snatched up and away from life's commonplace, homely joys, and forced to whiz past them in our maddening haste to reach far-distant points,—to do something, to get somewhere at a certain time! If only for a short time. we might, like the children, taking no note of the passing hours, at one moment with silent, unruffled calm, at another with wild, ecstatic joy, be free, be natural, be happy!

LESSONS IN DRAWING.

BY MARY D. HICKS.

IV.

ORDER OF WEEKLY LESSONS,

A casual observer of a successful primary school of our day will receive the impression of a school-room made bright by plants, pictures, fresh air, a cheery, winsome teacher, and children with happy, smiling faces. The conclusion of the casual observer would be that, apparently, school is a place to amuse and entertain little children, by exhibiting to them pretty pictures, by telling them pleasant stories, by singing with them, by playing games with them, by attractive conversation and manners, by drawing for them, by giving them playthings, including a slate and a pencil, by devising interesting physical exercises for them, and by leading them to see all there is around them. But if one studies the school day after day, and learns of the methods and motives of the teacher, it will be discovered that all this play and pleasure is based upon a careful study of the mental faculties and the laws of their development, and that what seem to be merely attractive and ingenious devices for entertaining the children, are parts of a systematic and orderly scheme of education, which is constantly in the mind of the teacher.

Every good teacher has clearly in her mind the end which she desires to reach by her teaching; she considers carefully and determines upon the means by which that end is to be reached, and then devises attractive ways of presentation; thus producing, finally, a scheme by which she works. There should be such a scheme for every subject of instruction, whatever it may be.

When, therefore, regular work in drawing is begun, after a few weeks spent upon form-lessons from solids, it must be according to a definite plan, carefully laid out in such a way that all the faculties may be exercised in the development of the work. Observation, imitation, memory, imagination,—these must all be exercised in turn, and must be appealed to in order to complete and strengthen conceptions of form. Lest some faculties should receive attention at the expense of others, it is well to have a plan of work which will provide regular work for all.

When a figure is chosen to be drawn, the work on that figure should include a lesson on its form from the solid, a lesson in imitating a drawing of it, a lesson in drawing it from memory, a lesson in drawing it from dictation, a lesson in drawing it from an object. Let us apply this. A square is the figure to be taught. The teacher determines that she wishes her children to see and remember that,—

A square has four sides.
A square has four corners.
A square has four equal sides.
A square has four square corners.

In order to have these ideas fixed in the minds of the children, and at the same time to avoid monotony, she wishes to present the ideas by appealing first to one faculty, then to another. Accordingly she draws up the following scheme of work for the week.

On Monday she will lead the children to observe the square in cubes and other objects, to see and to feel that its sides are straight, to count its sides and its corners, and to say that it has four edges and four corners; she will allow them to measure the sides of a square and to find that they are equal. The teacher or the children will give the word, "square," and the teacher will write it on the board. The children will find a great many squares, and will tell all that they have found out about its sides and corners.

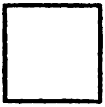
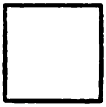
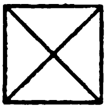
On Tuesday the teacher will draw a square on the board, while the children watch her; they will draw it on their slates, taking care to have the sides straight and equal, and the corners square. Then they will repeat the square.

On Wednesday the children will draw squares from memory.

On Thursday the teacher will dictate a square with, perhaps, some simple addition.

On Friday she will find a square object, from which the children will draw.

If the plan of the week were drawn out, it would be like this.

MONDAY	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
Geometric.	Reduction.	Memory.	Dictation.	Object.
		Lesson of Tuesday.		Square of bright paper.

This arrangement is suggested as good, although the exact order is not considered essential; but it is important that the first lesson given on a figure should be from a solid or object. When the idea of a figure has been gained by the children from a solid or object, then a graphic representation of the figure may be made for them to imitate. But if a drawing of the figure is given for imitation at first, the work of the children will be a mere lifeless copying and not the living exercise which it becomes when drawing is the expression of an idea.

* * *

First Steps in Teaching Language.—Pupils should be drilled, first, to have thoughts about an object or topic that may be presented to them; and, second, to express those thoughts readily, clearly, and in a manner corresponding to the best usage of the day. Place an object before the class and ask them to write a description of it, and to tell of its composition, its properties, and its uses; or show them a picture, and ask them to write what they see in the picture, and what they think about it; or present to them some topic that is quite within the scope of their thought, and request them to write their thoughts upon it. This being done within a limited portion of time, let the paper be exchanged, and give each one ample time to correct all the mistakes of his neighbor, marking every want of, or wrong use of, a capital letter, and every violation of good usages in the construction of sentences, giving attention also to punctuation and a choice of language to express the same idea.—*Prof. Platt.*

LESSONS IN TONIC SOL-FA.

BY T. F. SEWARD.

III.

The subject of rhythm may now be introduced. To bring the subject within the apprehension of the children, an illustration like the following may be employed.

Teacher.—Suppose a boy should come here and ask me to make him the drummer-boy of the school. I say to him, "Let me see how you can drum." He takes his drum and beats, something like this. [The teacher takes a pointer, or ruler, and strikes the desk very irregularly, fast and slow strokes succeeding each other in the most incongruous manner possible. The children will be sure to laugh, and the teacher may say, "Do you think I would be likely to employ him?" "No." "Why not?" "Because he doesn't keep time."

T.—Suppose another boy comes and drums like this [beating regularly, or some rhythmic movement that all can understand]. Is that better? "Yes."

T.—We are now going to study about keeping time, and I hope you will succeed better than the first boy did. [He taps regularly on the desk at intervals of about a second.]

T.—Are these beats regular or irregular? "Regular."

T.—We call these regular beats, pulses. What do we call them?

T.—I will produce some pulses with my voice. [He sings four even tones at any convenient pitch to the syllable *lah.*] How many pulses did I sing? "Four." You may sing four pulses as I did. [They sing.]

T.—As we gave names to our tones, DOH, ME, and SOH, we will also give names to pulses. We will call a pulse TAA (pronounce *Tah*). [He now writes eight pulses on the board, thus:]

TAA TAA TAA TAA TAA TAA TAA TAA.

T.—How many pulses have I written? You may sing them. [They should be intoned at an easy pitch]

T.—Now listen carefully to me, and see if you notice anything in my way of singing them, [He sings them with a strong accent on each alternate tone, *i. e.*, the first, third, fifth, and seventh.

T.—Did I sing the pulses all alike, or did they differ? "They differed." Listen again. [He sings them as before.] How did the first tone differ from the second? "It was louder." [Some will say stronger.]

T.—This louder or stronger singing of a tone we call accent. [Question]

T.—I will place a sign before the first TAA to show that it is stronger. [He places a perpendicular line before it and gives it the name *bar.*]

T.—When I sang the exercise, did I make the second tone strong or weak? "Weak." The sign for the weak accent is two dots, thus : [He writes it in and completes the exercise as follows:

| TAA :TAA | TAA :TAA | TAA :TAA | TAA :TAA. ||

T.—Do you see any bar in the exercise which is different from the others? "Yes, the last."

T.—We write it thus at the end of a line, and call it a double bar. [Question.]

T.—Now I want you to sing the exercise for me. Is the first tone to be strong or weak? The second? etc.

T.—From one strong accent to the next is called a measure. What is it called? "A measure." What makes a measure? "From one strong accent to the next." How many measures in this exercise? Tell me how many measures I sing. [He sings two, three, and four measures, indicating the boundaries plainly by making the accent very distinct.]

After exercising the pupils on the lesson in various ways, dividing the class, etc., the teacher says, "Listen to me and see if I sing the lesson correctly. If I make a mistake, say 'Wrong.'"

He begins by singing the first tone soft and the second loud. Pupils say "wrong." "What was wrong?" "The accent." "Listen again." He sings the exercise correctly till he reaches the last measure, when he prolongs the tone through two pulses. "Wrong." "Which measure was wrong?" "The last." "How was it wrong?" Various answers will be given. "Was the tone too long or too short." "Too long." "How long do you think it was?" "As long as two pulses." "We will call it a two pulse tone."

"Listen again, and see how the name seems to sound in a two-pulse tone." "It sounded like TAA-AA." "We will call a two-pulse tone, TAA-AA. What is the name of a one pulse tone?" "TAA." "Of a two-pulse tone?" "TAA-AA."

T.—Listen to me and tell me what kinds of tones I sing? [He sings to *lah* the two different tones, the pupils naming.]

T.—I will now write some tones under the lesson. [He writes the following notes under the tune-names.

| D :D | M :M | S :M | D :— ||

"What is the first tone to be sung?" "DOH." "How long is it?" "One pulse." "Is it strong or weak?" etc.

Other exercises, like the following, may be written on the board and sung:

D :D	D :—	M :S	D :—	M :S	D :D	M :S	D :—	
D :D	M :M	S :S	D′ :—	D′ :D′	S :S	M :M	D :—	
D: M	S :M	D :M	S :—	S :D′	S :M	S :M	D :—	

Key F.

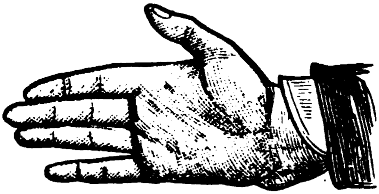
| D :D | M :M | S :S | M :— | D :D | S, :S, | D :S, | D :— ||
| D :D | S, :— | D :D | M :— | M :S | M :D | S, :S, | D :— ||

Key D.

| D :M | S :— | S :— | M :— | M :S | D′ :— | S :— | D :— ||

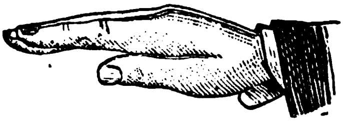
TONIC SOL-FA SIGNS.

The manual signs for the tones DOH, ME, and SOH are here presented. These signs are not only convenient as a means of practice, but it must be remembered that they represent, or at least suggest, the mental effect of the tones.



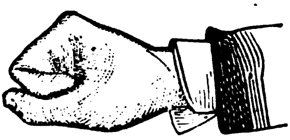
SOH.

SOH is a bright, clear, grand, trumpet-like tone. The words which are employed to describe the characters of the tones are not important. It is well to let the pupils express in their own language their impression of each tone.



ME.

ME is described as calm, peaceful, gentle, etc. The position of the hand is very expressive, being that with which one would make a caressing motion, as if laying it on a child's head.



DOH.

DOH has such a characteristic of strength and firmness that its peculiar effect can rarely be mistaken. All these mental effects are subject to modifications, which will be spoken of later in the course.

◆

— It is what the child does, under wise direction, that educates him.—*John Swett.*

WRITING-LESSONS FOR LITTLE FOLKS.

BY LYMAN D. SMITH.

X.

WORD-BUILDING.

"You have now learned five small letters. What are these letters good for, children? What can you do with them?" "We can write with them." "Well, what can you write with them? We can write words." "What words can you write? Let us put some of these letters together, and see. I will write small *i* on the board, and you may tell me what letter to write next, and what word it will make." The letter *n* and the word *in* are quickly given. "I think now we could put another letter right before *in*, and build a new word. Who can think of the letter and the word?" Very many are ready with *w* and *win*, and the second word is written on the blackboard. "This morning, children, I met a lady who lives in a convent and is called a ——?" "A *nun*," from many voices. "This is a pretty word to write. See! you have first over-rolling waves, then under-rolling waves, and then over-rolling waves again," writing the word slowly on the blackboard to illustrate the movement.

I next draw some long, straight lines, on the main slant, through the down-strokes, to let the children see that the straight lines all slant alike, and that the letters are all the same width, and say to them that this gives the word a *one* look, or uniform look. Then I rewrite the word, and speak about the short turns and the sharp angles, and ask them to see how distinct each line is; that the lines only touch in a point, and then separate; that they should never run together and spoil the looks of the word. All this educates the eye to form. After awhile, if I write the word wrong in any of these particulars, and set the class to criticising, many little pupils will detect the special error, and will be able to tell the cause of it and how to correct it. In this way criticism and correction are associated together in the early practice.

◆

— "Catch, then, O catch the passing hour;
Improve each moment as it flies;
Life's a short summer, man a flower,
He dies,—alas! how soon he dies."

SKETCH OF A LESSON IN FORM.

BY "SHADOW."

IV.

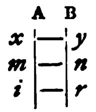
Review vertical, horizontal, and oblique lines; then develop idea of, and teach, *parallel*, *converging*, and *diverging* lines.

Matter: 1. Lines that are the same distance apart at all points are called *parallel* lines.

2. Lines that are not the same distance apart at all points, but which come together in one direction, and separate in the other direction, are called *converging* or *diverging* lines.

Teacher. (*Drawing vertically parallel lines on the board.*)—What have I done?

Child.—You have drawn two vertical lines.



T.—I shall name the first line A, and the second line B Now I touch A at a certain point, *x*, and B at a point *y*. I join these two points by a straight line. What does the line *xy* show?

C.—The line *xy* shows the distance between the lines A and B. [Class decide. Teacher confirms.]

T.—Now I shall take another point, *m* in the line A, and a point *n* in line B, and join the two points. What does the line *mn* show?

C.—The line *mn* shows the distance between the lines A and B.

T.—How does the distance between the lines A and B, shown by the line *xy*, compare with the distance shown by the line *mn?*

C.—The distance between the lines A and B, shown by the line *xy*, is the same as the distance shown by the line *mn*. [Class decide. Teacher confirms.]

T.—I take another point, *i* in the line A, and point *r* in the line B, and join these points. How does the distance shown by the line *ir* compare with the distance shown by line *xy*, or *mn?*

C.—The distance shown by the line *ir* is the same as the distance shown by the line *xy*, or *mn*.

T.—At how many points have we found the lines A and B the same distance apart.

C.—We have found the lines A and B the same distance apart at three points.

T.—Suppose I take other points in the lines A and B and measure their distance apart, how do you think the distances will compare.

C.—The distances will all be equal, or the lines A and B are the same distance apart everywhere.

T.—Then at how many points are the lines A and B the same distance apart?

C.—The lines A and B are the same distance apart at all points.

T.—John may make two horizontal lines that are the same distance apart at all points. Jane may make two oblique lines, and James two curved lines, the same distance apart at all points.

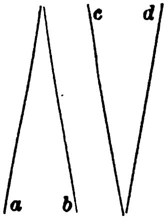
[Children do so; other children stating what they have done.]

T.—Who can tell me what lines that are the same distance apart at all points are called?

C.—Lines that are the same distance apart at all points are called (*C.* or *T.*) *parallel* lines. [Simultaneous recitation, while Teacher writes definition on the board.]

T.—Now look at these lines *a* and *b*, and tell me whether they are the same distance apart at all points.

C.—The lines *a* and *b* are not the same distance apart at all points; they are nearer together at the top than they are at the bottom. [Class decide. Teacher confirms.]



T.—Tracing the lines *a* and *b* upward, what do they do in regard to each other?

C.—They come together.

T.—And tracing the lines *c* and *d* downward, what do you observe?

C.—The lines *c* and *d* come together toward the bottom.

T.—What word may you use that means the same as *come together*, and sounds better?

C. or *T.*—Converge.

T.—In how many directions do the lines *a* and *b* converge?

C.—The lines *a* and *b* converge in one direction.

T.—And in how many directions do the lines *c* and *d* converge?

C.—The lines *c* and *d* converge in one direction.

T.—Thinking of this, what kind of lines may we call them?

C.—We may call them *converging* lines. [Class decide. Teacher confirms.]

T.—Compare the direction in which I am now tracing the lines *a* and *b* with the direction in which I traced them before.

C.—You are tracing the lines *a* and *b* in the opposite direction from which you traced them before.

T.—And what do the lines *a* and *b* do now in regard to each other?

C.—They go apart (separate).

T.—What word may we use that means the same and sounds better?

C. or *T.*—Diverge.

T.—Now tell me all you have learned in this lesson about lines *a* and *b*.

C—The lines *a* and *b* converge in one direction, and diverge in the opposite direction.

T.—Thinking of what you have learned about the lines *a* and *b*, what is true of *c* and *d?*

C.—The lines *c* and *d* also converge in one direction, and diverge in the opposite direction.

T.—Since this is true, what kind of lines may we call them?

C.—We may call them converging or diverging lines.

T.—What are converging or diverging lines?

C.—Lines that are not the same distance apart at all points, but which come together (*converge*) in one direction, and separate (*diverge*) in the opposite direction, are called converging or diverging lines. [Simultaneous recitation. Teacher writes definition on the board.]

Review by having children make different kinds of parallel lines, also converging or diverging lines. Then erase work on the board, and have children read what they have learned.

GEOGRAPHY.

BY MARY E. BADLAM.

IV.

Water on the Land (concluded).

Talk with the children, and let them, in imagination, follow with you a little stream flowing down the mountain-side.

At first it flows smoothly and evenly, but by-and-by it comes to a place where the land slopes very much, and the water, instead of flowing smoothly, dashes along and flows *rapidly* down the slope. This we call a "rapid."

Then describe the river as it again flows on until it comes to a place where it cannot flow on, but has to jump or leap from the rock or cliff it is on, as they themselves jump or leap from a high place to a lower. Give them the name "waterfall."

Let them imagine a brook flowing along until it comes to a hollow in the land, into which it flows and collects there. As it keeps coming down from the mountain, it will continue flowing into the hollow, and form a pool there with the land all around it. This, they will know is a "lake." If it is quite small, tell them it is called a "pond."

A lake that starts from a fresh spring they know will be fresh, and one that starts from a salt-spring will be salt.

Compare lake, pond, and island.

XV. *Points of the Compass.*

Show the children a picture of some place, and then, if possible, a map of the same place.

Let them tell what they see in the picture, and what in the map. Compare map and picture. I got this season from my class in a very short time: "A picture shows things just as they are, only smaller," and, "A map only shows the place or position of things."

These answers I considered sufficient, and I did not have them committed to memory, for I thought if they really understood the difference, they would be able to tell me in their own words, any time.

Show them how to draw maps, or "ground plans," as they really are. Let them draw, with you, a map of the school-room, in every instance letting them tell you the next step. Then they are ready to draw the map (with you) of the school-grounds and adjoining streets, and then maps of the routes they take to and from school. This should not be taken until they perfectly understand the other maps.

Teach them now to read the maps, pointing out rivers, mountains, lakes, cities, etc., as they did on the globe.

Show them a compass, and let them examine it and notice that wherever they place it the needle always points toward the same place or in the same direction.

Give the name "north" to this direction, and let the children point to streets that are north and objects in the northern part of the school-room. Find how many of the children go toward the north as they go home.

Talk about the "North Star," and show them how they can always find north.

Let them point in the opposite direction, and if they do not know, give the name "south." Let them point to objects south, as they did north.

Let them face the north, and point with the right hand to the east, and with the left hand to the west.

Ask them the use of these directions, or "points of the compass," as we call them.

Ask them, if they were lost, and knew their home was north, how they would find it.

Let them tell that the sun rises in the east and sets in the west.

Give the names "south-east," "south-west," "north-east," and "north-west."

Let them tell in what direction the school-house faces.

Show on the globe, *north*, *south*, *east*, and *west*, and impress upon their minds that in going north we do not go up, nor down as we go south.

Let them find north, south, east, and west on the map.

XXXII.—

18 = 9 and 9.
17 = 9 and 8.
16 = 9 and 7; 8 and 8.
15 = 9 and 6; 8 and 7.
14 = 9 and 5; 8 and 6; 7 and 7.
13 = 9 and 4; 8 and 5; 7 and 6.
12 = 9 and 3; 8 and 4; 7 and 5; 6 and 6.
11 = 9 and 2; 8 and 3; 7 and 4; 6 and 5.
10 = 8 and 2; 7 and 3; 6 and 4; 5 and 5.
9 = 7 and 2; 6 and 3; 5 and 4.
8 = 6 and 2; 5 and 3; 4 and 4.
7 = 5 and 2; 4 and 3.
6 = 4 and 2; 3 and 3.
5 = 3 and 2.
4 = 2 and 2.

This table may be constructed by the teacher with the help of the class, but the answers should not appear in the regular order given above. When once constructed so that the idea is apparent, let it be be removed, and each pupil may reconstruct it on the slate.

This table also comprises all the tickets necessary in addition. If any pupils are less successful in securing tickets than others, remind them that there being four sets of numbers in answer to some, they should notice what sets are named and be careful not to give them again.

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PESTALOZZIAN PRINCIPLES.—All lessons should be given in accordance with the following principles, laid down by Pestalozzi:

1. Activity is a law of childhood. Accustom the child to do,—educate the hand.

2. Cultivate the faculties in their natural order; first form the mind, then finish it.

3. Begin with the senses, and never tell a child what he can discover for himself.

4. Reduce every subject to its elements: one difficulty at a time is enough for a child.

5. Proceed step by step. Be thorough. The measure of information not what the teacher can give, but what the child can receive.

6. Let every lesson have a point, either immediate or remote.

7. Develop the idea, then give the term,—cultivate language.

8. Proceed from the known to the unknown, from the particular to e general; from the concrete to the abstract; from the simple to the re difficult.

9. First synthesis, then analysis; not the order of the subject, but order of nature.

EDITORIAL.

Spring approaches. The seasons are suggestive of valuable lessons. Spring is typical of the morning of life. We all bid it a hearty welcome. When winter releases his icy fingers, which have kept all vegetation so long in a sort of mesmeric sleep, and we feel the rays of the sun and see the budding and bursting of new life about us, instinctively we trace the beautiful connection of times and seasons with those of external nature and human life. The period of the helplessness of childhood is the wintry sleep that precedes the energy and life of young manhood; when this time comes to the child, the latent working powers are ready to have direction given to them. Now the teacher comes into the child's life with directing, moulding force; sympathy and suggestive teaching blend in their influence to prepare the mind and heart for the earnest work of life's summer-time, and the more serene enjoyments of its autumn season, and for the peaceful departure to the "shining shore" when age has become a burden.

SPRING SONG.

I.

I've banished Winter, saith the Spring;
Awake! arise, ye flowers!
Brisk breezes blow,
Bright sunshine glow,
And rouse the young year's powers.

II.

Rush up, ye larks, into the sky,
Sing high, and wake the flowers;
Ye clouds, make haste,
The earth needs taste
Your fertilizing showers.

III.

Ye pretty birds, hop on each bush
And bid its leaves come out;
Jackdaw and rook,
With knowing look,
Now wheel and fly about.

IV.

Pick up the grubs, and build your nests
With so much noise and chatter,
That, when you're heard,
Both beast and bird
Will wonder what's the matter.

V.

Let hills and banks and rocky pools
Put on their bright array;
Its petals gold,
Let furze unfold,
To hail the joyous day.

VI.

From distant lands I've told fresh birds
They must assemble here;
And o'er the sea
They come to me
To taste the Spring's good cheer.

VII.

I order now that all the world
Be active, up and doing,
To win my favor,
Useful labor
Must come to me a-wooing.

Much depends upon the primary teacher, in giving direction to children's natural love of the wonderful and beautiful. The impressions which simple natural objects make upon children often strike some deep chord which makes the key-note of their lives. The flower of early spring, a bright insect, the sparkling brilliancy of a star, the crescent moon climbing slowly up the blue vault in the silence and repose of evening, the rising or setting of the sun amid clouds, often give the first and deepest impressions of the "beautiful" in nature. These objects are everywhere available to the guides of young children, and should be utilized by them in giving tone and character to their teachings. It is a mistake to cram the memory and educate the intellect to the neglect of those things which tend to give play to the imagination and influence the heart. Happily a strong reaction is setting in against mere book and routine teaching in the elementary grades of school. This world is full of beauty, and children should be trained to a keen perception of its existence. It is the most valuable part of education. The young child's delight is *at first in feeling;* then follows a *thirst for knowledge.* The first epoch is the seed-time of childhood, and the flowers and fruit that come forth from it should be rooted in love and sympathy with what is beautiful in nature. The capacity for enjoying the varied sensations produced by color, light, shadow, hum of insects, songs of birds, the rustling of leaves, the gurgling of brooks, is the foundation for future trains of thought which will exercise the faculties of the mind in what is true, beautiful, and good. Such training leads naturally the young mind and heart to crave that knowledge which has its source in the infinite. To do this kind of work the teacher's own heart must feel its value, for nothing so firmly links heart to heart as a glowing sympathy and enthusiastic love for the beautiful, the true, and the good.

HOW THE ANCIENT GREEKS TAUGHT READING.

In a recent publication of Harper & Brothers, entitled *Old Greek Education*, by J. P. Mahaffy, M.A., we find some interesting accounts of elementary teaching as drawn from the writings of Plato, Dionysius, etc., that will interest the primary teachers of this age. Children were not taught words first, and then to analyze them, but started with individual letters, then learned their simplest combinations, and so on. A curious attempt was made about 400 B. C. to make the alphabet an agreeable study. This was the time when the newer Ionic alphabet of 24 letters was introduced and apparently ordered into the Greek schools. The so-called *grammatical tragedy* of Callias was a poetical kind of *a-b-c* book, in which single letters in turn spoke the prologue. The choral parts seem to have been refrains, working out the simpler combinations of vowels with each consonant. The seven vowels were introduced before the schoolmaster as *female characters*. The use of mnemonic verses to help children had, no doubt, their origin in the earlier Greek education. From the acquisition of letters the child passed to the study of *syllables*, and *syllabizing* was used generally by the Greeks for elementary instruction in reading. The Greek child was not afflicted like English and American children with absurd and irrational modes of spelling, as he had a fair guarantee that the individual letters reproduced the sound of the whole word; but he had other difficulties. He had to study with peculiar care the separation of words, punctuation, accent, and the subtle use of the numerous particles. The Greeks were very particular about melodious intonation and the rhythmical balance of clauses, even in prose. There is mention made of a special teacher in early days among the Greeks, whose duty it was to regulate and train the singing-voice of children. In fact the general assumption among their educators was that every child had both natural voice and ear for singing. The custom of reading aloud and making recitations from the great poets taught every school-boy to enunciate accurately and read rhythmically, and also made the pupils familiar with the choicest extracts of the best masters in the older literature.

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(Continued from March Number.)

[*Published by Van Antwerp, Bragg & Co., Cincinnati.*]

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Lesson on Kindness to Animals.

LESSON VIII.—THE CAT.*

[To be read to pupils by Primary Teachers.]

We have many reasons for being grateful for cats. They catch rats and mice. They are a daily delight and amusement to hundreds of thousands of children, and they make hundreds of thousands of homes happier by their presence.

Many eminent men in European countries have been very fond of them. The famous Dr. Johnson, of England, seemed to think quite as much of his cat as of any human friend. The famous Cardinal Woolsey, of England, used to receive the nobles of the land with his favorite cat perched on the arm of his state chair, or at the back of his throne. The great statesman of France, Richilieu, once excused himself from rising to receive a foreign ambassador because his favorite cat and her kittens were lying on his robes. Petrarch, the great poet of Italy, had his favorite cat embalmed when she died.

In eastern countries cats have been even more highly esteemed than in Europe or America. In Egypt, where it is supposed tamed cats were first used, they were considered sacred, and when they died were embalmed and placed in niches in the catacombs.

It is said that a Persian King once, before going into battle with the Egyptians, gave each of his soldiers in the front ranks a live cat to carry before him, and the Egyptians surrendered to the Persians rather than injure the cats, which they considered sacred. It is said that the eastern prophet, Mohammed, was so fond of his favorite cat that when it fell asleep on the sleeve of his robe one day, he cut off the sleeve rather than disturb the slumber of the cat, and it is said that to this day, almost every Mohammedan in those eastern countries has a cat in his house, which he loves and makes to share all his comforts.

Some of the peculiarities of cats are these: They can see very well in the night. They can climb trees by sticking their sharp claws into the bark. They can leap down considerable distances without hurting them, and walk without noise because they have little pads under their toes. They have long whiskers, or hairs, on their foreheads and cheeks, by which they know whether holes are large enough for their bodies to go through. They have very sharp teeth, very strong jaws, and very rough tongues. They are very fond of meats and fish. They do not like to get wet, and they have the power, when carried long distances to new homes, of finding their way back again to the old ones very quickly if they want to. I remember an instance in which a cat was carried on a sail-boat some twelve miles, from one Massachusetts coast-town to another, and in about two days, as I remember, she found her way overland back to her old home.

That they reason about things, I have often proved by turning my cat out of the dining-room into the kitchen, leaving the outer door into the front hall, or entry, open. She would go up the back stairs, down the front stairs, and in about two minutes walk back through the front door into the dining-room.

***By Geo. T. Angell, Esq., President of the Mass. Society for the Prevention of Cruelty to Animals.**

It is said that the great Italian poet, Dante, trained his cat to hold a candle in her paw for him to read; but one night a friend turned a mouse out of a box on to his table, when the cat at once dropped the candle and rushed for the mouse.

But while cats are useful in these various ways, they should never be allowed to become too numerous, because they are apt to eat the little birds, which are quite as useful, and sometimes more so than the cats; and when not properly fed, they are apt to catch and eat young chickens. I think that every one who keeps a cat should see that it has proper food and water, and should keep it in the house or stable nights, so that it may not kill these useful little birds, or the chickens. And I think where there are already cats enough, that all the kittens but one should be killed in a humane way as soon as they are born, and that the most humane way of killing them is that usually practiced in this country, by drowning.

SOME QUESTIONS.

[Others to be added by teacher.]

Why should we be grateful for cats?

What is said of the famous Doctor Johnson?

What is said of Cardinal Wolsey?

What is said of the French Statesman, Richelieu?

What is said of Petrarch, the great poet of Italy?

How are cats esteemed in Eastern countries?

How are they considered and treated in Egypt?

What is said about a Persian King?

What is said about Mohammed?

What is said about the Mohammedans?

What are some of the peculiarities of cats?

What is said about their finding their way long distances?

What is said about cats reasoning?

What is said about Dante's cat?

What is said about their eating little birds and chickens?

How should those who have cats, keep them?

What is said about the kittens when they are too numerous?

OUR NOTE-BOOK.

GLEANINGS.

— Bring your teaching within the grasp of the pupil. Use simple illustrations. Use simple language. Put yourself in sympathy with the little ones. Make them feel that you are their best friend.

—*The Missouri Teacher.*

—Work! and pure slumbers shall wait on thy pillow;
Work! thou shalt ride over care's coming billow;
Lie not down wearied 'neath woe's weeping willow.
Work with a stout heart and resolute will!
Work for some good, be it ever so slowly;
Work for some hope, be it ever so lowly;
Work! for all labor is noble and holy! —*Mrs. Osgood.*

— Instruction in right living, if it be not continuous, like daily bread and sunshine, is of small account; and instruction in right living given constantly, with simplicity, with heartfelt sincerity and kindness, is what children especially need to receive from their teachers. What shall it profit a boy, if he leaves school skilled in figures but untaught in manly honor that would make him an upright man of business? Or a girl, if with her grammar and her rhetoric, she has not learned to speak the words of truth, of righteousness, of Christian charity? —*Exchange.*

— Great teachers are born, not made. The qualities that give them success in their work must inhere in the germ of character; they cannot be grafted upon any stock. Yet those who have but modest gains in this direction, if their zeal be sufficient, may be greatly benefited by a study of the characteristics which made such men as Dr. Arnold great in their generation. What these men accomplished shows us the vast importance of the work of great teachers upon the world. They stand first in the moral and social economy of mankind. —*Ex.*

— Better to be unknown than untaught; for ignorance is the root of misfortune. —*Plato.*

—Dare to be honest, good, and sincere,
Dare to please God, and you never need fear.

Dare to be brave in the cause of the right,
Dare with the enemy ever to fight.

Dare to be loving and patient each day,
Dare speak the truth, whatever you say.

Dare to be gentle, and orderly too,
Dare shun the evil, whatever you do.

Dare to speak kindly, and ever be true,
Dare to do right, and you'll find your way through. —*Anon.*

— The following suggestions are made to aid the teacher in securing the attention of pupils:

1. Manifest an interest in the subject you are teaching.

2. Be clear in your thoughts, and ready in your expression.

3. Speak in your natural tone, with variety and flexibility of voice.

4. Let your position before a class be usually a standing one.

5. Teach without a book, as far as possible.

6. Assign subjects promiscuously, when necessary.

7. Use the concrete method of instruction when possible.

8. Vary your methods, as variety is attractive to children.

9. Determine to secure their attention at all hazards.

—*Edward Brooks.*

—Only the teacher, wise of heart,
Divined the landscape's blessed art;
And when she felt the lag and stir
Of her young idlers fretting her,
Out-glancing o'er the meadows wide,
The ruffling woods, the far hill-side,
She drew fresh breath of God's free grace,
A gentler look came in her face,
Her kindly voice caught in its own,
An echo of that pleasant tone
In which the great world sang its song,—
"Be cheerful, patient, still, and strong." —*St. Nicholas.*

—The teacher's fish-hook is the interrogation-point, for with his questions he angles in the minds of his scholars for facts, conclusions, inferences, and judgments,—the results of all mental processes. The best educators are now fully agreed as to the great superiority of the *drawing-out process*, compared with the *pouring-in* style of teaching. When the teacher does most of the talking, the minds of the scholars are apt to remain more or less inactive. Nothing wakes up the mind more quickly and thoroughly than a direct question. For commanding attention, for arousing curiosity, for quickening recollection, for fixing truth in the memory and applying it to the conscience, wise and well-put questions are invaluable. But to be most effective, questions must be well made. The mental fish-hook has some striking resemblances to the piscatorial article.

—*Penn. School Journal.*

—And when the world shall link your names
With gracious lives and manners fine,
The teacher shall assert her claims,
And proudly whisper, "These were mine!" —*Whittier.*

— The teacher, — *a.* should have good manners; *b.* should have good habits; *c.* should be a scholar; *d.* should plan and execute well; *e.* should have self-confidence; *f.* should have self-control; *g.* should be firm; *h.* should be consistent; *i.* should be courageous; *j.* should be just; *k.* should be tolerant; *l.* should be kind; *m.* should be patient.—*Exchange.*

— A public library is as necessary to a town as a nest is to a pair of birds. Scholars are sure to be hatched in it sooner or later, and, in all such institutions, you will see a good many old birds love to nestle, and find themselves very warm and comfortable, whether they breed and sing or not.

—*Dr. Oliver Wendell Holmes.*

— Moral culture rests upon the first impressions and influences of earliest childhood, which no knoweledge and no learning can completely erase.

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—*Tribune.*

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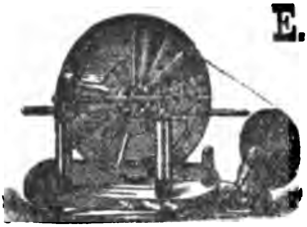

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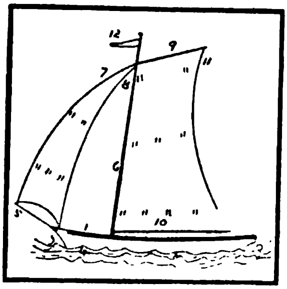

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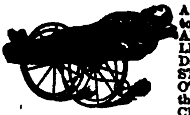

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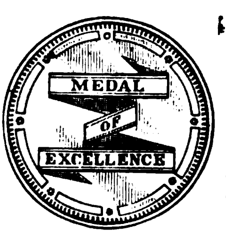

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THE

PRIMARY TEACHER.

VOL. V. MAY, 1882. NO. 9.

THE USE OF TIME.

BY WM. M. GIFFIN, TRAINING SCHOOL, NEWARK, N. J.

Time is to use, not to abuse. There are teachers who can accomplish more in ten minutes than others accomplish in an hour.

The latter often make the excuse, "I have not time," for this or that exercise of which, perhaps, she has heard some one speaking, and which she is willing to admit must be well worth trying if one only had time for it. She it is who has all of her spelling done orally; her class of forty pupils standing around the room, spelling a long list of words, each pupil reciting in his turn,—that is, one is reciting and thirty-nine are standing first on one foot, then on the other; or worse, perfectly straight, toeing the mark (a difficult task of itself, to say nothing of adding the spelling), waiting for his turn to spell,—the teacher going over and over the list so that each pupil will have had four or five tests. When the lesson is finished the teacher puts her hand to her throat and wonders what *does* make it ache so. Ache! there were no doubt twenty words in the lesson (though eight at most would be enough); there were forty pupils reciting. The teacher went around the class four times, *shouting one hundred and sixty* words as fast as the pupils could spell them! all this to give the class a drill in oral spelling which will never be of any practical use to them. If, when ready for spelling, she had said, "Class, clean slates, take pencils, position, spell," and had then pronounced the twenty words *once*, each pupil would have had twenty tests, no possible chance of getting just the words he knew, and he also would have had a writing as well as a spelling lesson; hence the teacher could have taken five minutes less for the writing period, and have given those minutes saved to some of the exercises for which she has had no time and best of all for the pupils, they would have spelled the words just as they will be obliged to do in after-life. There is no throat-ache now, as the teacher has not been using a loud, unnatural voice, and therefore, has not over-taxed her organs of speech.

She has also used at least ten minutes less time for spelling that she can give to some other exercise she has never before had.

After spelling, this teacher has an exercise in mental arithmetic, "which," she says to a friend, "I can't bear, as I never *can* get my class interested." She then turns to her class and calls out, "Sit in order, class. I want to see how well you can do for me in mental arithmetic this morning. George Brown, stand. Now listen while I *read* this example, so as to remember it. (*Reading.*) 'If I have sixty cents and spend ten cents for candy, twenty cents for apples, and lose twenty-five cents, and then find eighteen cents, how many times three cents have I left?'" (*!!!*) George looks foolish and sits, while the rest of the class are having a picnic. Why? Because the teacher did not proceed from the known to the unknown, from the simple to the complex, and the class were told that nothing was wanted of them, as George Brown was to do the reciting. If she had said, "Class, attention, clean slates, take pencils, right hands at your sides. If one apple is worth two cents, what will three cost? Ready!" and the *moment* she said ready, have it understood that each pupil was to write the answer (6) on his slate, and raise the slate with the answer toward the teacher, she would in thirty seconds have had forty examples worked; as each pupil would have worked one. At this rate two hundred and forty examples can be worked in three minutes. The class has become animated, and are anxiously waiting to see what is coming next.

Her friend now asks if she has ever combined a language-lesson with the mental arithmetic. She exclaims in surprise, "No, indeed! I have no time for *that!* it is all I can do to have the arithmetic." "But," says her friend, "one helps the other. If you ask your pupils each to bring some little toy to-morrow, and tell them if they do you will put them in a box, and in the arithmetic-hour will hold up one at a time for them to make examples about, you will have them feeling that the mental arithmetic exercise is a part of something that belongs to them, and each will try to out-do the other. I had my class bring some of their toys for me, and among other things they brought a top, ball, clothes-pin, ink-well, doll, pen, etc. Hold up something now, and see if some one will make an example for you; be sure you take something with which they are familiar." At this hint the teacher holds up a slate-pencil, and says, "Who will make an example for me, about this?" Mary White, the dull one of the class, raises her hand. "Well, Mary," says the teacher. Mary recites: "If one pencil costs one cent, what will five pencils cost?" The teacher looks surprised, and asks, "Who will work it? George Brown may try." (George:) "If one pencil costs one cent, five pencils will cost five times one cent, which are five cents." "I declare," says the teacher, "I never knew Mary White to state an example before." "Perhaps," replied her friend, "it is because you stand before the class with your book, and *read* the example for them; and they think if it is so hard you must read it, they must put all their strength on the memory, as you always insist on having it repeated just as you read it. Dr. Hall says: 'Unless one understands the laws of the mind, he will be apt to overestimate the value of the memory. The capacity to crowd the mind is not the capacity to educate.' As you accomplished so much with the slate-exercise and objects, you might shorten the time for mental arithmetic six or seven minutes, and have some little exercise not on your programme, and something that will please the children, as one of Miss Gilman's lessons on zoölogy, or Mrs. Morrill's game at multiplication-table."

The slate-exercise spoken of has been criticised by some "still teachers" because it is noisy. Teachers, *perfect order in a class-room does not mean perfect quiet. There is perfect order in our large machine-shops, but none that do any business have perfect quiet.* Remember you are dealing with mind, immortal mind; impressions made there are everlasting and indestructible. "MULTITUDES are what their teachers have made them."

PHYSIOLOGY FOR PRIMARY CLASS.

BY MRS. LOUISA P. HOPKINS.

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Teacher.—I have told you somewhat of all parts of the body except those which are kept in the two chambers within its outer frame. Put your hands upon your left sides, gently pressing. What do you feel?

Teddy.—I feel the little hammer that pounds all the time.

Teacher.—Do you have to keep that hammer sounding or beating by your own thought or will?

Blanche.—No; it goes itself.

Teacher.—Here is the heart of a calf. Let me show you how it is made, for yours, which is what you feel beating, is much like it. It has these two sides, one which fresh, red blood goes through, and one which the impure, dark blood, returning from its course through the body, fills. The heart is like a pump; it forces good blood, which has been purified, through numberless tubes, called *arteries*, to all parts of the body, to build it and feed it; then it receives that blood which has become impure, back through as many tubes, called *veins*, and sends it into another organ to meet the, air which changes it to pure blood again, after which the heart again receives the blood and forces it once more through the arteries; and so this goes on as long as we live, the heart forcing the blood through arteries and veins by this action we call "beating," like the motion of a hand squeezing and opening with great force and regularity. There are little doors in the heart which open and close as the blood rushes through, and assist in keeping its direction the same. There are little doors called *valves*, in the calf's heart. They are so nicely arranged that the blood cannot go the wrong way. They open and shut, open and shut, with every squeeze of the heart. You would wonder to see the force with which the heart sends this current of blood through the body. The blood flies swiftly around, leaving fresh life and substance for every muscle and nerve, and taking away the waste particles that need to escape into the air. If you should cut an artery, the blood would spout out like a fountain, and if it were not checked very soon you might bleed to death. This heart is necessary to life. It is placed in great safety within the chest. It has strong muscles to contract and dilate with unceasing regularity and great forcing power. If it is injured, death will result. The flowing of the blood through the heart, arteries, and veins is called its *circulation*.

THE LUNGS.

Teacher.—The organ into which the blood comes to meet the air and be purified by throwing off its waste particles is a double organ, called the lungs. It is within the chest, like the heart; it is the organ of breathing. Do you have to breathe?

Daisy.—I can wait a moment without breathing, but then I have to breathe again.

Teacher.—The action of the lungs, as well as the heart, is involuntary. You do not need to think of it or will it. It goes on regularly as long as we live. It is necessary to life, and the lungs are therefore a vital organ. I must also show you the lungs of the calf, and you will understand, better than I can describe it, how your own lungs look and act. Here are the two, like red sponges attached to tubes which are branches to this larger tube called the *windpipe*, since through it the air comes and goes into the mouth and nostrils. These two lungs will swell when the air fills all these little holes or cells. Now take a good, full breath. Do you feel the lungs swell within the chest as a sponge swells in the water?

Dolly.—I do; and they push down and forward and make me grow large

Courtenaye.—I feel the cool air coming into my mouth and nostrils when I do it.

Teacher.—The blood comes into a thousand little veins which line these air-cells of the lungs, and all that is bad in it escapes into the air in the cells, and it receives the life-giving part of the air which makes it fresh and pure to go back again through the heart to the body. When the blood, thus cleansed, leaves the lungs, the air which has cleaned it returns through the tubes and windpipe, through the nostrils and mouth, to the outside air; this breathing in and breathing out is repeated with every movement of the heart and lungs as long as we live. Thus the blood is kept pure, and the body renewed and alive. But you can see at once that the air about us is hurt by the escape of this waste from the lungs; we must have fresh, pure air about us all the time, or the blood will not be purified enough by breathing. Some air is more life-giving than other. You feel brighter and stronger in it. Out-of-door air is the best. If you wish to keep well and be strong, you must breathe fresh, clear air. It will make the blood red and give you rosy cheeks. You must hold yourself erect and wear nothing tight, so that the lungs and heart can act freely and work well. But do not run when you breathe too fast or when your heart beats too hard. Never overwork the heart and lungs by too violent or too long continued exercise, like jumping rope too long, or running when you are out of breath.

THE DIGESTIVE ORGANS.

Teacher.—There is one more organ which is necessary to life, within this upper cavity of the chest, protected by the spine, ribs, and breastbone, and by that strong muscle below them, called the *diaphragm*. It is the *stomach*. Here is the stomach of a pig; very much like yours. It is a kind of bag. This tube which comes into it from above is the *gullet* and opens from the back of the mouth. The stomach is the place where the food is made fit to be changed into blood. You can tell me a good deal about the food you eat, as it is made ready to enter the stomach. Grace, if you are hungry, that is when your stomach calls for food, what do you do with the food you have put before you?

Grace.—I put it into my mouth; then I chew it.

Teacher.—When you chew it, what wets it?

Grace.—Some water comes in my mouth.

Teacher.—There are three little sacs opening into the mouth, under the tongue and within each cheek, that squeeze a juice called *saliva* into the food to make it soft. As you think of it the juice starts from these sacs called *glands*, and you say your "mouth waters."

Prescott.—My mouth waters for an orange.

Teacher.—Elsie, what cuts up the food in your mouth?

Elsie.—My sharp teeth chop it all up fine.

Teacher.—How do you stir it about for your teeth to chew?

Edith.—My tongue rolls it around.

Teacher.—After it is all fine and moist you swallow it. A little trap-door opens to let it go into the gullet, and it is pushed along through the gullet by these little ridges partly opening and shutting, until it reaches this door opening into the stomach. When it is safe within, it will stay there if it is good and well prepared, but if it is only partly chewed or will hurt you, after a little while the stomach throws open its upper door again and sends it up the gullet and out of the mouth in a hurry. This makes us feel sick and is very unpleasant, but it is better than to keep it in the body. You must be careful, then, what you eat and how you eat. You will be told what will hurt you. What you must not eat, and you must not eat too fast and swallow great bits without thorough chewing with your sharp teeth. Do you like to eat, Teddy?

Teddy.—Yes, when I am hungry, or have something very nice.

Teacher.—How stupid it would be to eat if we did not enjoy it! We should forget or neglect it, and our bodies would have nothing to make blood of; but your sense of taste makes it pleasant.

Now the good food stays in the stomach two or three hours and is stirred about by the movement of the muscles of the stomach, and mixed with a juice that comes from the lining of the stomach called the *gastric juice.* After this it is soft and grey, and ready to go through the lower door of the stomach into another part of the food-organs, the *bowels*, which are below the diaphragm and in another cavity of the body called the *abdomen.* In this cavity, which is less protected than the chest, are the *bowels*, the *liver*, the *pancreas*, and some other organs, not belonging to the change of the food into blood. While the food is in the bowels, juices from the liver and from the pancreas mix with it. A greenish-yellow juice, called bile, comes from the liver, and the food is changed, while it is passing through the long, coiled tube of the bowels, into something thin and white which is drawn from the bowels through little tubes into a larger tube which empties it into the heart to be mixed with the blood.

This is the way by which your lunch which you may now eat is changed into blood that can become a part of your body, and all these organs which work upon it are called the *digestive organs.* Breathe good air, sleep, rest, exercise, and eat well, and you will be well, and happy, and useful, and, I think, *good.*

◆

— If you would be capable, cultivate your mind; if you would be loved, cultivate your heart.

DRILL.

BY KATE L. BROWN.

The father of a family once gave each of his three children a strip of ground to cultivate. After much discussion and mature deliberation each little land-owner decided to raise corn on his plot. The earth was plowed one bright spring morning, and long rows of hillocks prepared, into which the shining yellow and pale amber kernels were dropped by childish hands. Then after the planting was over the trio sat on the fence and discussed future crops, fondly building air-castles founded as yet upon the tiny seeds hidden in the dark, freshly-turned earth. How eagerly they watched earth and sky! What joy when the tiny green blades began to show themselves! Every day seemed full of new wonder and miracle as the stalks thrust themselves upward.

But day by day the great fiery sun crept farther northward, and hordes of troublesome weeds sprang up about the beloved corn. The little hoes were used more frequently, reddened spots and blisters began to appear upon chubby palms. Tears were often shed, and vehement declarations of, "I won't hoe that old corn another day," began to be the rule. Yet, somehow, the father's patience prevailed, and by and by the table was regularly supplied from the boys' plots, and Mollie harvested enough pop-corn to last all winter.

The children are now men and women, and have hoed some of the hard rows of life. Doubtless the foundations of their happy pluck were laid in those by-gone years when they fought, day by day, all the foes that were pitted against their little undertakings. At least they learned that the secret of success lies in steady effort.

And what lesson does this story bring to the primary teacher?

It means simply this, — that, even in the nineteenth century with all its wonderful improvements, nothing has been found to take the place of *work*. There is no royal road to knowledge. Despite improved methods, and a more thorough preparation on the part of the teacher, the education of a child cannot be carried on without much hard work and seeming drudgery to all concerned. It is not enough to teach a subject *once*, clearly and effectively; it must be done again and again. It must be reviewed and re-reviewed, brought up on all possible occasions, until it becomes digested and assimilated into the nature of the child, and forms a part of his very being.

We have all seen advertised various educational games which profess to give certain subjects by the mere playing. The strongest point in the matter is that the inventors of these miracle-working machines often claim that nearly all effort is done away with by the use of this special plan. Every intelligent teacher will know this to be impossible. We will not give our little ones the multiplication-tables to commit to memory in the beginning, as *we* were taught (?). We guide the child in grouping his little blocks to make certain combinations. We gradually teach him to express the same by means of written symbols. Finally, we gather up our material into one logical arrangement, and lo! the old familiar tables are before us. But is the victory won by the mere playing a few times with the pretty toys? Far from it,—a beginning only has been made. After a child sees clearly the relations of numbers by means of this objective teaching, he must *drill* and *memorize* as did the children of old; only the modern primarian works upon what he understands, therefore his drill will result in strength and confidence, whereas the act of the poor little martyrs of former days was simply one of memory, backed by very little understanding.

The primary school of to-day is a sunny, attractive place, presided over by some enthusiastic young genius, who by the force of her own magnetism leads her pupils into a world of color, harmony, and song. Everythig is cheerful and hearty, there is patience and love in the very atmosphere. Everything is done to cultivate the child's æsthetic nature. It is hard to criticise such a school without seeming to do violence to some of the finest traits in human nature. Not one point in such a training can be omitted. Little children need all that beauty and art can give them. At this age, as the mind is constituted, nine tenths of its knowledge comes through the senses. Every teacher must know how to cultivate these powers, and what will occasion their right activity. Yet even the very young child is not all of sense; he has memory, reason, judgment, and these powers must not be ignored or the culture will be one-sided and weak.

In many a school to-day, the time is taken in various exercises, good in themselves, pleasing and exciting to the children, and entertaining to the chance visitor. The next day another set takes the lead, often with no direct relation to the work of the preceding day. At the end of a month examine the children, and you will be surprised to find how little they know, how very little hold these exercises have taken. The fatal weakness of such teaching is not in the quality of the teaching, but that proper pains to impress facts was not observed. All education must be measured by two tests: what general influence upon mind and character it has, and the actual knowledge it gives the individual. The majority of people look but for the latter.

If Johnny can keep an account of his monthly expenditures, and write a sensible, well-expressed letter to his father free from errors in penmanship, spelling, and grammar, these practical results will speak well for his teachers. But here is shy, sensitive little Bess, who has developed, day by day, imagination and a love for the beautiful in form, color, and sound. But, alas! she cannot say her seven's tables readily, and hesitates and stammers when questioned. Papa frets a little and says, "Seems to me, wife, our girl is backward.—too much play in school." The parent in either case is right, and wrong also. We must have direct and practical results, yet not rest satisfied unless we are securing a full development of every power possessed by the child. Our primary schools are doing much to open the understanding, and cultivate a love of beauty in the child. Yet, thoughtful persons who study these schools, and watch the work done by the same children in the higher grades, complain that they are not sufficiently grounded in some points of the elementary work. They claim, also, that the upper-grade teacher has to spend much time in supplying these deficiencies before she can take up her own work. This is a serious charge, and must be met and settled; it cannot be evaded. New, and more rational methods must still produce the plain, practical results demanded by a busy, matter-of-fact world. If this is not so, distrust comes upon both teacher and method. These points will impress themselves upon the minds of all thinking teachers:

1. *Teach* clearly, and rationally. 2. *Test* frequently to prove that facts are understood. 3. *Drill.*

It is here that the real genius of the teacher asserts itself. It takes power to be able to impress a fact for the hundredth time, yet each time clothed in a new and attractive dress. And the teacher that can, day after day, lead a child's mind to form acquaintance with the same things, yet never weary, never disgust, never tire with it all, has learned the secret of labor. Let us surround our pupils then, with all the beauty and grace that art or nature can bring. Let us not fear to test the value of more rational and enlightened methods. Let us be independent workers, not to be laughed or scared out of our convictions. But remember, above all, that true results come only from long-continued effort. The processes of nature are slow. Flake upon flake, drop upon drop, grain upon grain, is the whole structure laid. In the same way does the mind develop. There can be no hurry, and God can make no mistakes.

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— Keep your ears open to all that is worth hearing, and closed to all that is not.

— Never excuse a wrong action by saying some one else does the same thing; this is no excuse at all.

SKETCH OF A LESSON IN FORM.

BY "SHADOW."

V.

ABBREVIATIONS.

I. r.—Individual recitation.
S. r.—Simultaneous recitation.
C. d.—Class decision.
T. con.—Teacher confirms.
T. w. b.—Teacher write on board.

Teacher reviews previous lesson, then developes idea of, and teaches, *angle*, *right* angle, *perpendicular* line, *acute* and *obtuse* angles. It will be observed that the definitions of the above terms are such as a child can make. They may afterwards be converted into mathematical definitions.

Matter: 1. The opening between two lines, made to look like a knife when it is open, is called an angle. (The divergence between two lines is an angle.)

2. The opening between two lines, made to look like a knife half-way open, is called a *right* angle. (When a line meets another line so as to make equal angles, each angle is called a *right* angle.)

3. A line which meets another line so as to form right angles is called a *perpendicular* line.

4. An angle whose divergence is less than that of a right angle is called an *acute* angle.

5. An angle whose divergence is greater than that of a right angle is called an *obtuse* angle.

Teacher. (*Presenting a pocket knife closed.*)—What is this?

C.—It is a knife.

T. (*Opening the blade.*)—What have I done?

C.—You have opened the blade.

T.—Thinking of what I have done, what is true of the knife?

C.—The knife is open.

T.—Name the parts of the knife.

C.—The parts of that knife are the blade and the handle.

T. (*Pointing to the opening.*)—What is this?

C.—That is the opening between the blade and the handle.

T.—How would you make a picture of this knife as you see it now?

C.—I should draw two lines with an opening between them. [C. d. T. con.]

T.—Mary may make the picture. [Mary does so.] What has she done?

C.—She has drawn two lines to look like an open knife.

T. (*Pointing to lines.*)—What do these lines represent?

C.—The lines represent the blade and the handle.

T. (*To opening.*)—And what is this?

C.—That is the opening between the lines.

T.—The opening between what lines?

C.—That is the opening between the lines made to look like an open knife.

T.—Who can make a definition from that description?

C.—The opening between two lines made to look like an open knife is called (T. give term) an angle. [S. r. W. b]

T.—Who can make other angles?

[C. makes several.]

T.—Show me the angle of each.

C.—The opening between the lines is the angle. [C. d. T. con.]

T.—Compare the directions of these lines, and tell me what is true of them.

C.—They have different directions. [C. d. T. con.]

T.—What shows that they have different directions?

C.—The opening shows it.

T.—Thinking of that what may we call the opening?

C.—We may call it the difference in direction between the lines. [C. d. T. con.]

T.—Who knows *one* word that means the same as those words, *difference* of *direction?*

[C. does not know. T. gives term *divergence.*]

T.—Now, who can make the definition of an angle, using this word, *divergence?*

C.—The divergence between two lines is an angle. [S. r. W. b.]

T.—Look at this knife again, and tell me one thing that is true of it.

C.—It is open.

T.—How far open is it?

C.—It is half-way open. [C. d. T. con.]

T.—John may make a picture of it as it is now. [Ch. does so.]

T.—Describe the opening in your picture.

C.—It is the opening between two lines made to look like a knife half-way open. [C. d. T. con.]

T.—Who can make a definition from that description?

C.—The opening between two lines, made to look like a knife half-way open, is called (T. give term) a *right* angle. [S. r. W. b.]

T. (*Drawing a line.*)—What have I done?

C.—You have drawn a line.

T.—And now what have I done?

C.—You have drawn another line.

T.—I shall call the first line *a*, and the second *b*. Where have I drawn *b*, as regards *a?*

C.—You have drawn *b* to meet *a*.

T.—By drawing these lines in this way, what have I made?

C.—You have made two angles. [C. d. T. con.]

T.—How do they compare in size?

C.—They are equal. [C. d. T. con.]

T.—Comparing them with the angle we have just made, what kind of an angle is each?

C.—Each is a *right* angle. [C. d. T. con.]

T.—How have they been formed?

C.—They have been formed by a line meeting another line.

T.—Thinking of the full description we have had in regard to these two lines, who can make another definition of a *right* angle?

C.—When a line meets another line so as to make equal angles, each angle is called a right angle. [S. r. W. b.]

T.—Who can give me the name of a line which meets another line so as to form right angles?

C.—A line which meets another line so as to form right angles is called (T. give term) a *perpendicular* line. [S. r. W. b.]

T. (*Making another angle.*)—Look at this angle I have just made. Compare its divergence with that of the right angle, and tell me what is true.

C.—The divergence of that angle is less than that of the right angle. [C. d. T. con.]

T.—Make a definition to fit that description.

C.—An angle whose divergence is less than that of a right angle is called (T. give term) an *acute* angle. [S. r. W. b.]

T.—If you were going to show an acute angle with the knife, how would you do it?

C.—I should have the knife less than half-way open. [C. d. T. con.]

T.—Observe the angle I have now made, and compare its divergence with that of the right angle.

C.—The divergence is greater than that of the right angle. [C. d. T. con.]

T. Make a definition to suit the description.

C.—An angle whose divergence is greater than that of a right angle is called (T. give term) an *obtuse* angle.

Review by having children make different angles and give names. Teacher makes angles, and has C. name them. C. shows different kinds of angles by means of the knife, and gives names. Then T. erases work on the board, removes objects, and has C. recall definitions.

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— You are not building *on* the future, but on the past and present *for* the future.

LESSONS IN TONIC SOL-FA.

BY T. F. SEWARD.

IV.

Three-pulse (triple) measure is quite as easily understood by the children as double or two-pulse measure, when presented by this natural method. It may be introduced as follows:

Teacher.—Listen to me. [He sings, at one pitch, to the syllable *lah*, four two-pulse measures, making the accents distinct.

T.—How many measures did I sing? "Four." How many pulses in each measure? "Two."

T.—How do you tell the number of pulses in a measure. "By the accents." Is the first accent in two-pulse measure strong or weak? "Strong." The second? "Weak."

T.—Give the order of accents in two-pulse measure, four times in succession. "Strong, weak; strong, weak; strong, weak; strong, weak."

T.—Listen to me again. [He sings, to *lah*, four three-pulse measures.] Are these measures the same as the others, or different? "Different."

T.—How many tones in each of these measures? "Three." We will call them three-pulse measures. What is the first accent in three-pulse measure? "Strong." The second? "Weak." The third? "Weak."

T.—Give the order of accents four times. "Strong, weak, weak," etc.

T.—I will write a lesson in three-pulse measure. What is the first to be placed on the board? "A bar." I will place a D after it. What comes next? "Two dots." [Teacher writes a D after it.] What next? "Two dots again. [Teacher writes and finishes the exercises as follows:

Key C,

| D :D :D | M :M :M | S :S :S | D′ :— :— | D′ :D′ :D′ | S :S :S
| M :M :M | D :— :— ||

T.—Look at the fourth measure. How long is the tone in that measure? "Three pulses."

T.—Before singing the lesson, you may TAA it together. [They do so, the teacher taking care that the second and third accents in each measure are given softly. He should tap distinctly with his pointer, which will mark the tune of the fourth measure as they sing it thus:

| TAA–: AA–: AA |

A few lessons in three-pulse measures are here given as suggestions to the teacher.

Key C.

| D :M :D | S :— :— | S :M :D | S :— :— | S :D′ :S | S :D′ :S
| M :S :M | D :— :— ||

Key G.

| D :S, :D | M :D :M | S :M :D | S :— :— | S :M :D | S, :D :M
| S :M :S | D :— :— ||

Key G.

| D :— :D | S′ :— :D | M :— :— | D :— :— | D :— :M | D :— :S
D :— :— | — :— :— ||

Question as to the length of the last tone.

TWO-PART SINGING.

The introduction of the tones by chordal instead of by scale successsion (DOH, ME, SOH, instead of do, ray, me), prepares the way for a much earlier introduction of part-singing than is possible by the other method. The simplest method is that in which one division of the class sings the same tone (DOH) while the other division sings the tune. A number of exercises are here given for such practice. Where classes are not prepared for a division into two parts, the melody can be used as before.

Key D.

| D :D | M :M | S :S | M :— | S :S | M :M | S :M | D :— ||
| D :D | D :D | D :D | D :D | D :D | D :D | D :D | D :D ||

Key F.

| D :— | M :— | S :— | M :— | S :— | M :— | S :— | D :— ||
| D :D | D :D | D :D | D :D | D :D | D :D | D :D | D :D ||

Key D.

| D :D | M :D | M :S | D′ :— | D′ :D′ | S :S | M :S | D :— ||
| D :— | D :— | D :— | D :— | D :— | D :— | D :— | D :— ||

Key G.

| D :D | S, :S, | D :D | M :— | M :S | M :D | S, :S, | D :— ||
| D :D | D :D | D :D | D :— | D :D | D :D | D :D | D :— ||

Key G.

| D :M | M :S | D :M | M :— | S :M | D :S, | D :M | D :— ||
| D :— | — :— | D :— | — :— | D :— | D :— | D :D | D :— ||

Question as to length of the first tone of lower part.

BOTANY.—OUTLINE OF STUDY.

BY GEORGE H. MARTIN, A. M., BRIDGEWATER, MASS.

I.

LESSONS TO TEACH THE PARTS OF A PLANT.

The object of these lessons is to secure to young pupils an elementary knowledge of plant-life, which shall serve as a foundation for a subsequent scientific study of the same. They afford an admirable opportunity for the training of the perceptive faculties, and supply the best kind of material for language-teaching.

I.—To teach to name the parts.
  Root, Stem, Leaves, Hairs, Buds, Flowers, Fruit, Seed.

II.—Teach to describe the parts.
  Root.—The root lives in the ground.
  Stem.—The stem bears leaves.
  Leaves.—The leaves grow on the stem.
    The leaves are thin.
    The leaves are flat.
    The leaves are green.
  Hairs.—The hairs grow on the leaves and on the stem.
  Buds.—The buds grow on the stem.
    The buds are full of little leaves.
    Leaves grow from buds.
  Flowers.—The flowers grow on the stem.
    The flowers are bright-colored.
    The flowers smell sweet.
  Fruit.—The fruit grows on the stem.
    The fruit has seeds in it.
  Seeds.—The seeds grow in the fruit.

III.—Teach to name and describe the parts of a leaf.
  Petiole, Blade, Stipules, Veins.
  Petiole.—The petiole is narrow.
  Blade—The blade is broad.
  Stipules.—The stipules are like little blades.
    The stipules are at lower end of the petiole.
  Veins.—The veins are in the blade.
    The veins are hard.

IV.—Teach to name and describe the parts of a flower.
  Sepals, Petals, Stamens, Pistils.

Sepals.—The sepals are on the outside of the flower.
The sepals are green.
(All the sepals form the *Calyx.*)
Petals.—The petals are next inside the calyx.
The petals are bright-colored.
(All the petals form the *Corolla.*)
Stamens.—The stamens are next inside the corolla.
The stamens have two parts.
One part is like a thread. (Call this the *Filament.*)
The other part is on the top of the filament. Call this the *Anther.*)
In the anther is a yellow powder. (Call this *Pollen.*)
Pistils.—The pistils are in the middle of the flower.
The pistils are larger at the bottom and the top.
(Call the large part at the bottom the *Ovary.* Call the large part at the top the *Stigma.* Call the part between the *Style.*)
There are some little bodies in the ovary. (Call them *Ovules.*)

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LESSONS IN DRAWING.

BY MARY D. HICKS.

V.

THE USE OF THE BLACKBOARD.

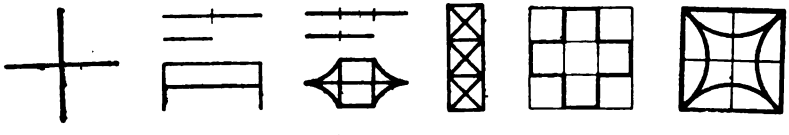
BY THE TEACHER.

It is not necessary, in this day and generation, to speak of the value of the blackboard as an aid in teaching. All teachers know that a blackboard is indispensable in a school-room; that it furnishes a means of quiet communication with fifty or one hundred pupils almost unattainable in any other way; that on the blackboard a reading-lesson, a writing-lesson, a number-lesson, a geography-lesson, a drawing-lesson may be given; teachers who can draw know the value of drawing upon the board to illustrate any of these lessons to a class. But a drawing-lesson from the blackboard means more than that the blackboard is a convenient place to put a figure so that all the class may see it,—means more than to cultivate attention on the part of the children. A great value to children in drawing a figure from the blackboard is, that they thus receive a lesson in Reduction (assigned in the scheme of last month, to Tuesday), and gain the idea that proportion is not dependent on size. Of course this statement should not be made to primary children, but they can learn that the small figure on the slate and the large figure on the board may tell the same story, and that a figure may be reduced in size without changing its shape.

Another value in a drawing-lesson from the blackboard is, that it gives the teacher an opportunity to show the way and order in which a figure should be drawn.

For little children the drawing from the board should be purely imitative. The teacher should draw the figure upon the board in the presence of the children. This may sometimes be done line by line, the teacher waiting for the class to draw each line before she adds another; or the teacher may draw the whole figure upon the board, and then call upon the children to imitate it. It must be borne in mind, however, that children will imitate not only the figure, but also the way of drawing it, and that from frequent imitation, habits are formed. The teacher, then, should be very careful to draw the figure in the best method, to place points when necessary, to make these points small, to make those lines light which should be light, and to draw the lines in the right order; remembering that if there are two horizontal lines in a figure, the upper should be drawn before the lower; that if there are two vertical lines, the left should be drawn before the right. Watchful little eyes will follow every motion, and as the teacher does, so will the children do.

A number of illustrations are here given of groups of lines and of figures that may be used as blackboard exercise in the first year of school.



Simple as these may seem, the teacher should study them before the time of the lesson. It is a good thing in this preparatory study, as well as in the actual giving of the lesson, to draw upon the board the outline of a slate having the same proportions as those used by the children. Within this outline the teacher should draw the figure determined on for the lesson, placing it as it is desired the children should place it on their slates, and drawing it of a suitable size in proportion to that of the outlined slate. In order that this may be unhesitatingly and intelligently done when giving the lesson, the teacher should give herself careful directions about all the details of the figure, that the whole work may be clear in her own mind, and may not involve unexpected and unsuitable difficulties for the children.

For instance, if the first illustration given is taken as an exercise, the teacher should determine the length which the lines shall be in proportion to the slate, and the place of the figure on the slate. The study of the first illustration should result in something like the following

DIRECTIONS FOR THE TEACHER.—Place points for a horizontal line, carefully estimating the distance they should be from the left side and from the upper side of the slate, and draw the line.—Mark its center.—Place points as far above and below the center as half the line.—Connect these points by drawing a vertical line.

If the third illustration is taken, the study of it should result in something like these

DIRECTIONS FOR THE TEACHER.—Place points for a horizontal line, draw it, and trisect it.—As far below the left end of the horizontal as one-third the line, place a point. As far below the second point of trisection as one-third the line, place a point.—Connect these points, thus making a horizontal line two-thirds as long as the first.—Place points for a horizontal as far below the first as its length.—Draw the horizontal, and trisect it.—As far above and below each point of trisection as one-third the line, place points.—Connect these points by verticals.—Connect the ends of the first vertical with the left end of the horizontal by curves curving inward.—Connect the upper ends of the verticals by a horizontal.—Connect the lower ends of the verticals by a horizontal.—Connect the ends of the second vertical with the right end of the central horizontal by curved lines curving inward.

But it must not be forgotten that these are directions for the teacher, not for the children, and that the children's work at the beginning should be mainly imitative.

BY THE CHILDREN.

Children are happy to draw on a blackboard. This is a good reason for sending them to the board frequently; but they should also be sent there frequently that they may gain greater freedom and readiness by working on the board. Do not hesitate about allowing them to draw on the board; let them become as familiar with the use of the chalk and the vertical surface of the board as they are with the use of the slate-pencil and the horizontal surface of the slate.

◆

— Hush! I hear the silver rain
Beating on the western pane.
Singing songs under the snow;
Calling earth to wake below;
Ah, sweet April comes, who never comes in vain.

—*Barry Cornwall.*

RIVERS OF THE ATLANTIC COAST.

BY MRS. LOUISA P. HOPKINS.

Let us launch our light canoe on the free Atlantic streams,
Kennebec, and Androscoggin, and Penobscot's foamy gleams,
Amid the somber forests, on the big-horned moose's trail,
See the logs for whirring mills, and the masts for thousand sail;
Skim the crystal crust of winter on the snow-shoes' willowy frame,
Meet the Indian in his wigwam, and the settler on his claim,
Spy the crests of old Katahdin, or the ice of Moosehead lake,
Shoot the rapids of the freshet, clear the log-jam's rushing break,
Pass Bangor's tall new made shipping, till we reach the open sea
From Maine's grand forest rivers, unfettered, broad, and free.
Then darting up the Merrimac, through Massachusett's gate,
By the looms of busy cities with their bales of woven freight;
Lowell, Newburyport, and Lawrence, up to Manchester we float,
Then to lovely Winnepisseogee we will take our little boat.
On this pearl of pearly lakelets, where the little hills rejoice
And the snowy peaks are calling with their granite-echoed voice,
Where grand, majestic ranges, like the Alps, around us stand
In the names of mighty heros of our happy father-land.
Through Vermont's hills and valleys rolls Connecticut's deep tide,
By New England's thrifty villages and pleasant towns we glide,
On to the Queen of cities; our land's commercial mart,
To pay the loyal homage of a proud and patriot heart,
On the beautiful, bright Hudson, with its towering palisades,
With its marble-pillared cities and its silvery cascades,
Through the lovely Catskills wandering, to the Adirondack slopes,
Find the trout in crystal shallows, and the deer in tangled copse.
Recall the shades of history; see Heinrich Hudson's face
In the flush of hope and courage, urging on his fruitless chase,
With the thunder of his nine-pins rolling down the distance large;
We'll explore for other waters in our gallant, tossing barge.
In the Mohawk's fertile valleys, by the necklace of fair lakes,
Where Niagara's mighty torrent in resistless power breaks;
Where the Delaware is rippling, and the Susquehanna flows,
Through lands of summer beauty, twined with jessamine and rose,
For Potomac's stately waters allure us swiftly on,
Where stands our country's capitol, the spacious Washington.
O'er Roanoke's bright sparkle, o'er James' foaming wave,
Virginia wafts the message of Mt. Vernon's sacred grave.
Leave the swirling Alleghany, the Monongehela scan;
Not the grimy smoke of Pittsburg, nor the blood-stained Rapidan,
Not Oconee nor Ocmulgee, where they join the Altamaha,
Nor the Wateree and Congaree pouring into Santee's maw,
Nor the Coosa, Tallapoosa shall entice to nearer view;
Alabama or Tombigbee at the Mobile rendezvous,
Nor the Flint and Chattahooche tempt us on their devious way
Through the Apalachicola into Mexico's huge bay.

But we'll breathe the gentle zephyrs of the sandy southern strand,
And we'll leave the Chesapeake by her beauteous Maryland;
With pennon gaily flying, the belovèd stripes and stars,
In the Carolina rivers we escape the shoals and bars.
Capes Fear and Hatteras warn us, Pedee and Santee call,
And the noble, broad Savannah, goodliest river of them all.
Avoid the spreading barrens of the naked Southern Pine
So odorous with the balsams of tar and turpentine;
Steer wide of treacherous currents in Okefinokee,
One glimpse of Dismal Swamp is a glimpse enough for me.
But see the dusky workers amid plantations white
With the wealth of Northern factories; it is a cheery sight.
See the cotton-fields and rice-swamps, see the sugar-cane and palm,
And the boughs with long gray mosses drooping in the lazy calm.
On the sullen St. John drifting, by the sleepy crocodile;
Let us moor our weary bark in some sweet-embowered isle.
Let us gather gorgeous blossoms, rest in golden orange-grove,
And dream the sunny South-land is the only land we love.

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PRIMARY SCHOOL MISTAKES.

BY A. E. WINSHIP, SOMERVILLE, MASS.

The work of the primary school is simply initiative, and they mistake its mission who glory in its achievements of results. While deprecating all criticisms based on prejudice, we think there is a spirit in which the friends of better methods of instruction may criticise existing tendencies.

There is no place in which fallacious theories are so dangerous in practice as in the primary school, for the reason that the mind of the child is in that condition in which you can train him to fabulous heights of eloquence, peculiar mathematical rapidity, or extraordinary skill with pencil. Districts are numerous in which there is no grammar class that is as rapid or accurate in addition and the simpler arithmetical processes as the primary class. Improperly forced, you can get greater attainments, within certain limits, with little children than with older ones with the same expenditure of energy. This is the wrong line upon which to work, for the simple reason that the acquisitions of those years are not available later in life, the child being as liable to blunder in addition at twelve as though he were not a prodigy at seven. It develops faculties before nature intended, diverts all the forces of the mind from their legitimate channels, uses forces and materials that were intended to be expended in the enlargement of the brain and in increased mental possibilities of after-life, and makes all subsequent school-life tame and uninspiring. The fatal error in this modern, foaming, primary school-life is that it mistakes entirely the aim and purpose of this grade of school, which must always be simply initiative. It has placed teachers of genius and originality, so called, in this grade where they are least needed; has set them at work for tangible results where they are of least account, and has stimulated the pupil's pride and ambition where most harmful.

It is of little importance what facts the child learns before he is seven years of age, for they will be as completely forgotten within six months as though they had never been learned, and will not come back afterward by any associational connection. The average child under seven years of age readily forgets faces, localities, and easiest of all, names and words.

The true work of the lowest grades in our school system is to establish a method in acquiring facts and processes, which method shall be so universal in its application that it may be developed and the facts applied in the grades above, until in due time correct habits shall be ineradicably formed and the knowledge ingrained by frequent use.

I am aware that much of our highest modern educational authority tends in the direction of teaching innumerable facts to young pupils, leaving the classification and systematizing until later in life. The one chief objection is, that there is nothing retained by the child for classification, having passed into the region of perpetual forgetfulness.

Lay the foundation of good habits of work, and develop these habits wisely as they will be applied in each advancing grade, and utilize these methods in learning whatever they will need to know in the advanced grades, and then the pupils will go forward to the grammar school prepared to do its work. Any primary school is a success that initiates the pupils in habits of work which insure the successful prosecution of grammar school work. All other primary school work is worse than a failure; it is an educational crime, even though the school may have made a brilliant showing before visitors.

◆

— In the long run fame finds the deserving man;
The lucky wight may prosper for a day,
But in good time true merit leads the van,
And vain pretence, unnoticed, goes its way.
There is no chance, no destiny, no fate,
But fortune smiles on those who work and wait,
In the long run. — *Anon.*

EDITORIAL.

It is of primary importance that the teacher, even of very young children, should be broadly educated, not only in the usual branches of school studies, but *professionally*, in the principles and methods of instruction. Having these qualifications is not enough to insure the highest success in teaching. The tact and ability to *gain* and *hold* the *attention* are essential. Children are not only instinctively good, practical philosophers, but they are shrewd enough to know whether the information is given them in a style which will pay them to listen to it. If the teacher has the power to awaken a lively interest in a subject, the scholar will conclude that it is worth his attention, which depends more largely upon the feelings stimulated than upon the direct control of the will. Locke long ago stated the principle clearly when he said, "Curiosity in children is but an appetite after knowledge. I doubt not but one great reason why many children abandon themselves wholly to silly sports and trifle away all their time insipidly, is because they find their curiosity baulked and their inquiries neglected"

If the teacher will study the children when engaged in their favorite games she will find illustrated the influence of interested attention. Many teachers fail absolutely in their methods of explanation. Not only must simplicity be studied, but directness of statement. Children go directly for what pleases them, and teachers must use words which will convey their exact meaning, if they would hope to gain a firm hold of the minds of the taught. Any confusion of terms, or vagueness of expression, tends to bewilder the young and make them listless and indifferent. The late lamented Jas. T. Fields, in one of his latest articles prepared for publication, gives the following excellent hints in regard to mental training from the would-be pupil's standpoint. He says:

> "If I were a boy again, I would school myself into a habit of attention oftener. I would remember that an expert on the ice never tries to skate in two directions at once. One of our great mistakes, while we are young, is that we do not attend strictly to what we are about just then, at that particular moment. We do not bend our energies close enough to what we are doing or learning. We wander into a half-interest only, and so never acquire fully what is needful for us to become master of. The practice of being habitually attentive is one easily attained, if we begin early enough.
>
> "If I were to live my life over again, I would pay more attention to the cultivation of memory. I would strengthen that faculty by every possible means, and on every possible occasion. It takes a little hard work at first to remember things accurately, but memory soon helps itself, and gives very little trouble. It only needs early cultivation to become a power. Everybody can acquire it."

Teachers of little children should, at this season of the year, interest them in the fresh beauties of the external world, the wonders of growth, etc. Teach them to observe every new development of the season,—bud, leaf, and flower. It will quicken their thoughts, feelings, and aspirations toward their Creator. Things of beauty instinctively exert a silent but powerful influence upon the young, and tend to mould their character and conduct for good.

CORRESPONDENCE.

BOTANY.

Editor of Primary Teacher:—In teaching botany to primary scholars, it has proven beneficial to give the lesson in a story-form. The facts can be as clearly presented, and will remain as firmly impressed upon the memory. It will possess a charm, and pupils will be surprised to know that it has been work. The following is intended to embrace several lessons.

In our school-room is a geranium-plant. Let us have its story. A small branch, with but two or three leaves, was brought to us, and we were told to put it in some fresh earth in a jar, water it and watch it as it grew into a plant. The little plant had never troubled itself for food or drink, but its wants, when necessary, were supplied by the mother-plant; now it must look out for its own needs, and soon sends little roots down into the earth; each one of which is filled with mouths so small that we cannot see them. Every day we pour water on the earth which gathers something rich and healthy for food, and passes into these numberless open mouths. The branch begins to grow, we see a small leaf begin to unfold; and as it grows, like boys and girls, it gets hungry. The mouths in the roots cannot furnish it with enough food, so new roots are formed, and from these tiny roots, or rootlets, run off in every direction, because as the plant thinks, the more roots, the more mouths; the more mouths, the more food it can take, then the more and faster it can grow. Soon other leaves begin to appear, and we must call it not a *branch*, nor a *slip*, but a *plant*. This liquid passes up to the leaves, where the sun changes it into sap, but which is really the plant's blood, and which passes through and by the side of the small veins of the leaves, into all its parts, that is, into the stems and the branches. The air that we breathe into our lungs mixes with the blood and takes from it all that is impure, and that is to us, when we breathe it out, poisonous. This is what the plant needs. Now we find that it has another set of mouths. The first were *eating*-mouths, and were in the roots; these are *breathing*-mouths, and are in the leaves. We cannot see them any more than we could the others, but they are in the under side of the leaves and breathe in the air we call bad, and which would harm us, call it good, and in the leaves mix it with the blood, changing it and sending it out fresh to us again. So that the leaves are really the plant's lungs. Even while it is yet very small the buds begin to appear, which soon blossom into a large cluster of bright flowers, pleasing us with their beauty and fragrance.

The same rule that has guided the geranium in its workings is used by all other plants, and while each part,—as the root, the stem, the leaves,—is under consideration, encourage the pupils to collect and bring those of different plants, for comparison and to show the great variety. Many useful and interesting hints may be given in this way, to be enlarged upon by the bright ideas presented by the children.

All plants do not grow from the slip. Sometimes it is closely shut up in a little shell,—the seed. This is planted, becomes moist, the sun shines upon it till the plant becomes tired of its little prison-house, bursts out, sends its tiny roots into the earth for food, peeps its head above ground, and grows into a plant. Some of them become very large and strong. The tall trees, the bushes, grains, grasses, and even the plants in the garden, all work and live in the same way, We have now seen how they have grown until they take care of themselves. They are, in truth, little traders. We have constant dealings with them, and cannot do without them. We plant the seed or start them from the slip, then care for them. Let us see what they give us in exchange for our trouble.

In the following, write the topics and let the class give all the objects with which they are familiar, adding others not found in daily surroundings.

1. Give good air. We could not live without pure air. These curious traders seem to know it, and keep plenty of good, fresh air for us to breathe.

2. Give food. The grains furnish us the different kinds of flour for our bread; vegetables are found in the garden; animals feed upon the grasses and grains, and give us meat; honey is gathered from flowers, and stored away for our use.

3. Give medicine. When we are sick we find they are of use, for many of them are changed into medicine. The teas for a cold you can easily find. There are others that doctors call by long, hard names.

4. Give clothing. Linen cloth comes from a plant called flax; cotton, from the round, white balls of the cotton-plant; woolen, from the wool of the sheep which has fed upon plants; leather, from other animals; and for silk, a worm had eaten mulberry-leaves, had spun for itself a nice silk blanket, had become drowsy, and had it taken from him.

5. Give tools. The trees are plants that grow strong and hard, and give us lumber from which parts of many tools are made, from a threshing machine to a wood-saw.

6. Give buildings. From the lumber is made our houses, churches, school-houses, stores, etc.

7. Give furniture. Trees, some of them very choice, and growing at a great distance, furnish lumber with which to make furniture for our houses, etc.

8. Give fuel. Corn furnishes cobs; trees, stove wood; and coal is formed from plants that very many years ago were buried far below the surface of the earth,—so low that there are deep mines for getting it.

9. They give beauty. There is a great variety in the size, form, color and fragrance of plants and flowers. There is always something new and pleasing about them. They help make the world very beautiful. By studying and admiring them they do us good by making us both happier and better people. JULIA PICKARD, *Lena*, *Illinois.*

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Lesson on Kindness to Animals.

LESSON IX.*

THE SHEEP, THE PIG, THE TOAD.

[To be read to pupils by Primary Teachers.]

For our warm woolen clothing, our blankets, and shawls, and stockings, and mittens, and carpets, and everything that is made of wool, we are indebted to those kind and harmless creatures, sheep and lambs.

The lamb has been for ages the type of innocence. In eastern countries sheep are most kindly cared for, and tenderly treated. The eastern shepherd does not drive his sheep, but leads them, carrying the feeblest lamb in his arms. When the Psalmist would speak of God's kindness, he says: "The Lord is my shepherd; I shall not want. He maketh me to lie down in green pastures. He leadeth me beside still waters."

In Europe and America I fear they are not treated so kindly. Some men are so wicked that in winter and cold weather they cut off the warm fleeces from these poor creatures, and then send them to the markets, where they sometimes shiver and freeze several days before they are killed. And in some of our slaughter-houses some men are so cruel that they kill them in the presence of each other, and not separately as they should be killed.

PIGS are generally considered, and found to be very dirty, but that is the fault of their keepers. not of the pigs. They would be very glad to get clean straw, clean water, clean food, and a clean sty, and then they would be cleaner than some children. Nothing Some of them have been taught many cunning tricks, such as to pick out the letters of the alphabet and make a word out of them.

Some years ago I was walking near North Conway, New Hampshire, one day, when a large dog came from a house and followed me. A little farther on another dog came from another house and followed me, and when, a few minutes later, I looked behind I found a large pig following me. I walked a considerable distance, and they all followed. Then I went back to the house the last dog came from and asked how this happened. The man told me that his dog was the friend of the first dog that followed me, and his pig and dog were such friends that it was almost impossible to keep them apart. Wherever the dog went the pig would follow.

I read, sometime ago, a very funny story about a dog and pig kept on board a ship. They were good friends, but liked to play tricks on one another. The dog had a nice kennel which the pig would try to get into in stormy weather, but as it was only large enough for one, when the pig got in first the dog had to stay out. One day it began storming and piggie went to the kennel, but found doggie already there. Piggie thought a little, and then went to the dish out of which both were fed, and began to make a noise with his mouth as though he was eating. Doggie pricked up his ears, came out of the kennel and ran for the dish, when piggie ran for the kennel, and got snugly fixed there before doggie had found out the trick.

It is a great pity that men treat these creatures so cruelly in sending pleases them better than to be kindly treated. Pigs are very intelligent. them on railroad cars thousands of miles without food or water, so that many thousands of them die on the way. And it is a great pity that many of them are killed in a most cruel manner. When I was in the great slaughter-houses of Paris, France, I found that pigs and hogs were always stunned by a single blow on the head with a long-handled, round, wooden mallet, before they were killed, and so they died without knowing that they were to be killed, and without suffering.

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* By GEO. T. ANGELL, Esq., President of the Mass. Society for the Prevention of Cruelty to Animals.

And now I have a few words to say about that very useful and good creature, though not very handsome, the TOAD.

All children should know that toads are not only entirely harmless, but are among our best friends. They live on, and destroy, thousands of ants, spiders, and the many bugs that injure our gardens. In France they are considered so valuable in gardens that they are sold at from fifteen to seventeen dollars a hundred, or fifteen to twenty-five cents apiece.

The great Duke of Wellington, many years ago, found a little boy crying because he had to go away from home to a school in another town, and there would be no one to feed the toad which he was in the habit of feeding every morning, and the noble-hearted Duke, sympathizing with his young friend, promised that he would see that the toad was fed every morning. This he did, and letter after letter came to this little boy from Field Marshal the Duke of Wellington, telling him that the toad was alive and well.

SOME QUESTIONS.

[Others to be added by teacher.]

For what articles are we indebted to sheep and lambs?

What has the lamb been for ages?

What is said about the eastern shepherd?

What does the Psalmist say?

How are they sometimes cruelly treated in winter?

How are they cruelly treated in slaughter-houses?

What is said about pigs being clean?

What about their intelligence?

What can you tell about the pig near North Conway?

What about the pig on the ship?

How are they cruelly treated on railroads?

How are they killed in Paris?

What is said about toads and their value in France?

What can you tell about the great Duke of Wellington's care for a toad?

The New England Publishing Company, 16 Hawley St., Boston, will issue a new educational journal, to be called "THE PUBLIC SCHOOL," Thomas W. Bicknell, Manager. It will appear April 21st, 1882,—Froebel's Centennary,—and it will be devoted to the discussion and illustration of the principles and methods of education. It will contain 16 pages,—32 columns. Among the writers already engaged are Hon. John W. Dickinson, Larkin Dunton, LL.D., Anna C. Brackett, Col. Francis W. Parker, Marion Talbot, Prof. Hermann B. Boisen, Rev. A. D. Mayo, Hon. John D. Philbrick, N. A. Calkins, LL.D., Robert C. Metcalf, Mrs. L. P. Hopkins.

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OUR NOTE-BOOK.

APRIL, MAY, JUNE.

BY MRS. M. M. GUNNISON.

Shy April walks across the land
With hints of coming sweetness,
Outreaching with her timid hand
To welcome May's completeness.

MAY.

Complete with bursting bud and bloom
With grasses softly springing,
The wild-woods lavish store, from gloom,
This happy month is bringing.

This merry, matchless month of May,
The air with fragrance filling,
Till every bird, its own sweet way,
Its sweetest note is trilling.

JUNE.

So love-notes wake the slumb'rous heart,
And gladden this newcomer;
She shakes her robes with shyest art
And says, "My name is Summer."

Ah! happy secret in her breast,
The truth she now discloses;
The early flowers lain to rest,
She comes,—the Queen of Roses.

SCHOOL-PASTIMES.

CONSTRUCTION.

With very young children, we are often at a loss to know just how to fill in the odd moments to the best advantage. However carefully we may arrange our programmes, and time our work, we shall find ourselves in carrying out these same programs losing or gaining a minute here or there, according to the contingent circumstances of the particular session.

Hence it is well to have a fund of *reserve* exercises from which we may draw in case of need. From time to time we will find the class losing ground in one study, and gaining too rapidly in another; or we may find, if this is not the case, that a dozen or more of the children, through sickness or inability, are not quite up to the average, and require a little special attention in one study or another.

The question arises, What shall the rest be doing? The regular work on board or slate has been accomplished; perhaps the class has just finished a reading-lesson and would take little interest in silent reading; they may be children too young to write stories from pictures, if left to themselves. What shall they be doing while we give our attention to the backward ones? Here is where our fund of reserve exercises, or occupations, will be of service.

The inclination to *construct* manifests itself at an early age in children, for, up to the time they enter school, we find them busied with *building-blocks*, *sliced animals*, and the like. This love of construction is one of the teacher's strongholds, and one of which she should be quick to take advantage, while it will require little outlay of time or funds to provide material for the children's amusement and instruction as well. My children have been much interested in making the old-fashioned paper "lamp-lighters."

I well remember the fascination it was to me, when a child, to twist and roll the bright-colored strips to just the right degree of nicety, and the pride and satisfaction I took in having a large supply of the lighters ready for use. I remember, however, I could only be induced to make the more humble-looking ones from strips of common newspaper, on condition that the pretty, bright-colored ones be kept for a time, for ornament, to make the holder look pretty.

In giving the strips to the chidren I have been careful to give out bright-colored ones, that all the enjoyment possible might be derived from the occupation. Of course many of the children failed to get the idea, even after I had stood before the class, making several lighters, giving carefully each step of the process, from the gradual twisting to the final fold at the end to hold the twist in place. Yet I was delighted to find how many did get the idea, and were able to carry home one or two perfect "lighters" in a day or two, to show their friends.

With very young children it is desirable that as soon as they have acquired some facility in the use of the slate and pencil, and are able to draw fairly straight lines in different directions, that they shall be able to combine these lines in some pleasing form. In order to do this the child must have in mind an idea of what he wishes to draw. With the idea of developing this thought, I have provided for the children a quantity of the common little wooden "picks." These are without much bulk or size and hence good for the work, making no noise either, if a child by accident drops one of them on the floor. Each child is provided with sufficient to make a good-sized design; and it is astonishing to watch the progress he will make from day to day.

At first he may content himself with a simple arrangement of his "picks," to form angles; gradually the thought comes to him to form them into a star or series of stars. Or he may arrange them to form a square, while other "picks" divide or subdivide it. From watching other children make their designs he sees how he may vary the the arrangement still more, and will take delight in having it "just like Willie's, only his lines run *this* way, and mine run *so*," illustrating the direction with the hand, usually.

Each day the child's idea of what he may construct grows more and more definite, until at last, from the simplest style he arrives ultimately at a symmetrical and original design, which really has some merit and beauty. All this may be accomplished by the children, with little or no direction from the teacher beyond a word of commendation here, or of suggestion there. As a little incentive the best design may be reserved, to be drawn upon the board at the teacher's leisure.

Later on, a child may be encouraged to still greater efforts by being allowed to draw upon his own slate the design he has already formed with the "picks." Occasionally I have found a child who had constructed an elaborate design and had obtained permission to draw a copy of it on his slate, deliberately taking it to pieces to reconstruct it, line by line, drawing on his slate lines corresponding to those he was forming with the "picks," thus showing that he had the idea clearly in mind of the design he should ultimately draw, although he might not be able to copy it in all its intricacies as the design stood arranged on his desk. One cannot doubt the result of this training will be shown when we demand such work, later on, as comes under the head of "original design," and we shall not be met when we say, "Draw me a design," with the discouraging answer, "I can't think of anything.

PRIMARY SCHOOL.

GLEANINGS.

THE CULTURE OF CHILDHOOD.—By culture we are to understand the proper training and development of the whole nature of the child. Whatever tends to give it a proper knowledge of itself, of its possibilities and capabilities, of the position it now occupies, or that it may be called upon to occupy in future life; whatever broadens its views and gives it higher and holier aspirations, may be said to conduce to its culture.

Some teachers regard the young mind as a great depository wherein they may deposit for safe keeping the marvelous contents of their own minds. Forgetting the axiom that work, to be beneficial, must be performed by the child, they never try to teach him to think for himself, but strive, as far as possible, to do all his thinking for him, and cram his mind with the contents of their own. Children taught in this way have no true culture. They may be taught to repeat rules and definitions on the same principle that the parrot repeats his formula of words, and generally with about as great a degree of intelligence. Such training produces a false culture.—*Rev. J. W. D. Anderson, in C. Christian Advocate.*

OYSTER CULTURE. — The fresh water is necessary to the fattening of the oyster which fits it for market. During the late spring and the summer, the seed-oyster is brought from the wild fields, if we may use the term, and planted in beds along the river-bank in the water. In the Autumn they are raked up, the small oysters which have grown about the shell knocked off and cast back into the water for next year's crop, while the original bivalve is sent to market.

— To prevent disorder, the teacher, *a*, should be a thorough scholar; *b*, should prepare her lessons; *c*, should be skillful in teaching; *d*, should see that pupils are comfortable; *e*, should see that all have plenty to do; *f*, should thoroughly inspect all work.—*Iowa Course of Study for Ungraded Schools.*

— Teach beginners in the primary geography classes by making them familiar with the local geography of the place in which they live.—*John Swet.*

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THE
PRIMARY TEACHER.

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PRIMARY READING.

BY WM. M. GIFFIN, TRAINING SCHOOL, NEWARK, N. J.

There are in most of our reading-books excellent rules for reading. They may all be expressed in one, however, which may be taught to primary children; viz., "Read as you talk." A child, if left alone, will read a sentence right, that is right, according to his own thoughts. Oftentimes he thinks wrong, and consequently reads wrong. The teacher's work, therefore, in a reading-lesson, as well as in all other lessons, is to see that the children not only *think*, but that they *think right.* A child may read the following sentence (from the Third Reader): "We cannot walk now," as follows: "*We* cannot walk now." This would be wrong if we wish to carry out the writer's thought, but not wrong for the child if his thoughts lead him into the error and nothing has been done to cause him to think right. The child's thoughts are upon the story of the children and their papa; hence he thinks all that is said has reference to them, and to *him* it is *they* who cannot walk, therefore he gives *we* the emphasis.

Many teachers, I fear, would correct the error by first reading the sentence right, after which, calling on the pupil to read. The pupil then reads it right, but he has done no thinking; he has simply imitated or aped his teacher; and as he can only learn by thinking, he has learned nothing only in the sense that a parrot would. The pupil may always know how to read this sentence, but he has done nothing that will assist him to read any other; and if this same sentence is in a future reading-lesson, he will, no doubt, read it as before; when, perhaps, to express the writer's thought requires a radical change, not only in the emphasis, but also in the inflection. Teachers, then, should not think they have taught children to read when the children are able to imitate the teacher, or to pronounce the words at sight. *Reading* has not been taught until the pupil reads as he would talk, or in other words, until he reads thoughtfully, and, therefore, reads with the right emphasis, articulation, inflection, and pitch. It is not necessary to teach the pupils the definitions of these terms, or to use the terms themselves, in a primary reading-class. There are many methods that may be used to cause the children to think, one of which is as follows: the teacher may write on the board, "I can see the man," and ask the class to read it.

Class.—I can see the man.

Teacher.—I will ask some questions, and those who think they can then read it may raise their hands. *Who* can see the man? [All hands raised.] Class may read.

C.—*I* can see the man.

T.—Oh, no; you *can't* see the man. *C.*—I *can* see the man.

T.—You can *hear* the man. *C.*—I can *see* the man.

T.—You can see the *boy.* *C.*—I can see the *man.*

T.—Very well done. *I* will now read and, you may tell me what it *means* each time. [Reading.] I can see the man. Who can tell what it means? [Most of the hands raised.] Jennie may tell.

Jennie.—It means that you can see the man.

T.—Right. We will try again. *I* can see the man. Willie, tell what it means.

Willie.—It means some one has asked, *Who* can see the man.

T.—Yes, that it is true. I am pleased to see you are learning to *think.* Try again. I *can* see the man. Mary may tell the meaning.

Mary.—It means some one said you could *not* see the man, and you want them to know you can.

T.—That is right, Mary. I know you could not have given so good an answer without thinking. Listen again. I can *see* the man. Who can tell? John may.

John.—You mean you can *see* the man, and not that you can *hear* him.

T.—Right again. We are having both a reading and a language-lesson to-day. Once more. I can see the *man.* Well, May, you may tell.

May.—You mean it is not a *boy*, or anything but a *man*, that you see.

T.—Correct. Who can take the same words and ask a question with them? [All are ready.] John may try.

John.—Can I see the man?

T.—Yes. I will now write John's lesson on the board (*writing*). Willie may read it so we will know what he wants to see

Willie.—Can I see the *man?*

T.—Mary may read it so we can know *who* wants to see.

Mary.—Can *I* see the man?

T.—George may read it so we can tell what he wants to do.

George.—Can I *see* the man?

T.—You have all done nicely. You may now pass to your seats and see how well you can write the lessons that we have been reading

A LITTLE ABOUT MINERALS.

BY H. L. CLAPP.

IV.

One of the chief parts of granite is *mica*, often wrongly called isinglass. Isinglass is often used in making puddings, but mica would be no better for puddings, than beach pebbles for plums. Isinglass is a gelatinous substance obtained from the swimming-bladder of the sturgeon, a large fish found in the rivers of Russia. When it is prepared for puddings it is like jelly. Mica is a mineral, a stone, and all the boiling water in the world would not make it eatable. Most country children of my acquaintance call mica isinglass, and grown people make the same mistake, and it is about time something was done to teach the truth of the matter.

The uses of mica are very little known by people in general. Some uses of it have lately become known to myself. Its transparency makes it useful for window-panes in China and Siberia, where it is found in large sheets. Sometimes it is used for the same purpose in this country, especially where it abounds and where the people are poor. Perhaps you have never seen a piece of mica large enough to make a pane of glass. In the office of the Hartford Mica Company, on the corner of Washington and State streets, Boston, are sheets two and a half feet long and about eighteen inches wide, and they can be split into sheets so thin that a dozen of them would be no thicker than a sheet of stout writing paper. With scissors it can be cut very easily into strips of any width that is desired. Being a mineral, fire has but little effect upon it except to discolor it, and therefore it is very useful to put into coal-stoves; in fact, this is its principal use, and so great is the demand for this purpose that the supply of mica is always insufficient. Its great elasticity makes it useful where any severe shock or jar is to be sustained, but where light is required, therefore it is used on men-of-war, where the shock of heavy guns would shatter glass. If necessary, sheets an inch thick can be obtained, which will sustain not only the shock of guns but the shock of waves. Compass-boxes are sometimes covered with it. It has the disadvantage of softness, being much softer than glass, and so it is liable to be scratched easily and thus become defaced and spoiled. Ground mica is useful for lubricating machinery, and resembles much the soap-stone powder which the shoe-dealer peppers into the tight, new shoe that you are about to try on.

There are many kinds of mica, but the most useful is the silvery, clear, tough, elastic variety known as *muscovite*, which is found in New

Hampshire, at Acworth, Grafton, and Groton, in plates a yard across. Most of the black mica is a variety called *biotite*, and the bronzy, reddish-coppery is *phlogopite*, but they have no known uses.

Probably all of you know how *chalk* looks; but, perhaps, not more than one of you in a thousand can tell what it really is, how it was made originally, or where it comes from. Using as much of it as we do in school, we ought to know more about it than simply to name it. Here is a piece of coral, and here is a piece of chalk. Both are light, white, and porous; but the pores, or little holes, cannot be seen in the chalk, while they are conspicuous in the coral. Perhaps you are thinking, What has chalk to do with coral? Very much. Both are made of the same material, carbonate of lime; and at one time probably the chalk was coral. Coral is composed of millions and millions of the skeletons of very small, jelly-like marine animals, commonly called coral insects, though they are not insects at all, but polyps. The waters of oceans, rivers, and lakes contain great quantities of carbonate of lime, which is well illustrated by powdered chalk, though we cannot see it as it usually occurs in water, any more than we can see the sugar in our lemonade, because it is in solution. The little polyps drink it in with the water, and it in some mysterious way forms their skeletons or shells, just as the carbonate of lime which we take in with our food and water forms our bones· Millions and millions of coral polyps are dying all the time and leaving their skeletons packed together in the form of coral. Then the waves wash thecoral to dust, which settles down at the bottom of the ocean like white mud; and in course of time, when the water has been removed, this white mud hardens and sometimes makes chalk, though more commonly limestone. Now you see that all those chalk-marks on the board are made of the bones or shells of millions of little polyps, which were years ago as full of life as any of you.

There is no chalk in this country, but it is very common in Europe, from Ireland to the southern part of Russia, a distance of more than 1100 miles. Once the ocean covered all that chalk region, and the little polyps lived there in countless numbers, and dying, left their bones there for us to use at last in making figures on the blackboard. Finally, Western Europe, which was once under the ocean, was slowly raised out of it, and the white chalk-cliffs of England and France came up, and there they remain to this day. Now, knowing the interesting history of chalk, perhaps we shall have greater reverence for it, and use it more carefully and thoughtfully.

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—Keep your ears open to all that is worth hearing, and closed to all that is not.

ZOÖLOGY IN VACATION.

BY C. GILMAN.

Winter is over, warm days are coming, and in my own classes we exchange zoölogy for botany during the spring term. We have had for our last lesson upon insects a comparison of the different ones that we have studied, so that the children may recognize the most marked species. But we will not leave the insects; shall we not rather go with them to their homes? Let us study them and the flowers together. No more alcoholic specimens now, often mere caricatures of what was once beautiful, but the little creatures themselves, full of life and brilliancy and grace. The bright colors of the flowers have a new meaning for us as we see that the spots and lines on the petals are so many index-fingers to guide the bees, always pointing straight to the spur or sac or tiny gland that holds the honey. Nothing will fill a class with more enthusiastic delight than to discover one of the contrivances by which insects are forced to carry the pollen from one flower to another. Here is a big bumble-bee with his coat all covered with the yellow dust. How can he help brushing it off on the stigma of the next flower he crawls into? There is a moth with two sticky lumps of pollen on each side of his head; we must watch to see where he will carry them, if he does not fly too far and too fast for us. These are only instances of the many ways in which we connect our little winged friends with the plants.

But it is especially of a plan for vacation that I wish to speak. It is only a plan, and has yet to be tested with children under twelve years of age; but if it can be carried out, the results can hardly fail to be good. Every scholar who wishes may choose for study some insect, or other animal that he has been particularly interested in, or some spot where he will hunt for animals of different kinds. He will learn everything that he can about these, not by killing them, but as our great naturalists have done, by watching them in their homes. If any are old enough and persevering enough, they may write out in a note-book what they learn, and bring it to the others when school reopens.

It is easy to tell what choice some of the children will make. One little boy, who spends the greater part of his summer at home, has a small pine grove for his playground. In this he will look for new friends. Another has already begun his search in the brook that flows near his home. Water-beetles, caddis-worms, young dragon-flies and other insect-larvæ are among the treasures that he finds. His great delight, however, is the tadpoles, of which he never fails to have a colony. One little girl likes the beetles best, and will be happy if she can find the beautiful goldsmith-beetle on her father's pear-trees.

But we will not all choose insects. Some of us will seek for old friends on the seashore. The star-fish and sea-urchin are to be studied again. From the rocks half buried in seaweed, some will take the limpets and the little sea-snails whose pretty white or purplish egg-cases are fastened like so many tiny vases to the sides of the rocks. Among the rocks and under old wharves we will find the hydroids, those exquisite little animal-flowers of the sea. We will even dig in the sand and the mud for sea-worms, at the sight of which all our old prejudices against crawling creatures vanish, leaving only wonder and admiration in their stead.

We do not expect to make any startling discoveries, but we shall bring back from our rambles a more vigorous health, keener powers of observation, and a deepened love of nature, that will be our abundant reward.

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FIRST STEPS IN NUMBERS.

BY W. W. SWETT.

VII.

XXXIII.—

7 and 6 = 13	6 and 7 = 13
17 and 6 = 23	16 and 7 = 23
27 and 6 = 33	26 and 7 = 33
37 and 6 = 43	36 and 7 = 43
47 and 6 = 53	46 and 7 = 53
57 and 6 = 63	56 and 7 = 63
67 and 6 = 73	66 and 7 = 73
77 and 6 = 83	76 and 7 = 83
87 and 6 = 93	86 and 7 = 93

Note that the numbers in each column increase by 10. In the ordinary drill upon such combinations, only the most active minds become familiar with the various results, and connect them with the first. Let pupils say "57 and 6 is 63 because 7 and 6 is 13." It is not necessary that the steps in the process should be brought out. That the answer has increased the same as has the number to which 6 is added is apparent; and if a child barely associates each result with the first one, that is sufficient at first.

Work of this sort may be continued as long as is thought necessary, or profitable, but each exercise should be preceded by a table, and attention should be called to the regular increase by 10's.

Let one begin at 8 and count by 10's to 88, and another at 13 and count to 93 for the column of answers. Then ask some one to supply the number to be added. Reverse the table also, as above.

XXXIV.—

2	4	6	8
3	6	9	12
4	8	12	16
5	10	15	20
6	12	18	24
7	14	21	28
8	16	24	32
9	18	27	36

Children will soon commit to memory the above table by rows (not columns). The first gives four products of multiplication by 2, the second by 3, and so on.

The table may be constructed by the class, with the help of the teacher. How many of the various results are obtained has been considered. The object now is to secure them.

XXXV. Give examples in multiplying by 3 and 4, the pupil to depend on his memory for the results as given in the table (XXXIV).

Give examples in addition, involving any or all of the digits.

If it is desired that all shall have the same examples the teacher may give a row of figures to be regularly changed by the pupils as follows:

6 2 3 8 5 9 7 4

Change the 6 from the first place to the last:

2 3 8 5 9 7 4 6

Next change the 2 in the same manner:

3 8 5 9 7 4 6 2

Children can readily learn to make these changes, and then one example can be transformed to several, the multiplier, and the lower row in addition, of course, remaining the same.

XXXVI. The following tables include all that remains to be learned in multiplication:

5 × 5	6 × 6	7 × 7	8 × 8	9 × 9
5 × 6	6 × 7	7 × 8	8 × 9	
5 × 7	6 × 8	7 × 9		
4 × 8	6 × 9			
5 × 9				

For the 5's refer to XXI., and for the 9's to XXVIII.; or attention may in case of the 9's be called to the combination of digits in each result, the first digit being a unit less than the digit multiplied.

The teacher may write,—

$$\begin{array}{l} 9 \times 7 = 6 \\ 9 \times 4 = 3 \\ 9 \times 8 = 7 \\ 9 \times 5 = 4 \\ 9 \times 9 = 8 \\ 9 \times 6 = 5 \\ 9 \times 3 = 2 \end{array}$$

and let the pupils note that 6 is one less than 7, 3 one less than 4, and so on. Now let them supply the right-hand digit, so that the sum shall equal 9. The tables will then be reduced to,—

$$\begin{array}{lll} 6 \times 6 & 7 \times 7 & 8 \times 8 \\ 6 \times 7 & 7 \times 8 & \\ 6 \times 8 & & \end{array}$$

It will be well to prepare tickets for the 15 sets of numbers in the first table above, and others to include the 2's, 3's, and 4's. They may be used separately at first, and afterwards combined.

XXXVII. "6 apples and 7 apples are 13 apples. If you have 13 apples and give away 6 of them, how many are left?" The child has no difficulty in understanding that numbers composed of two parts may be separated into two parts; but if he is taught, as is commonly the case, to subtract one at a time, or if he is not led to see that in a thorough knowledge of addition he has complete control of subtraction, he has double work to do, and it will be imperfectly done at the best.

He has already learned to subtract 10, 5, 4, and 2 (see XXII). He will easily comprehend 9 from 18 leaves 9, 8 from 16 leaves 8, etc.

The numbers in IX. may form the subject of a lesson in subtraction, to be treated according to the form at the beginning of this section.

XXXVIII. At the most there now remain only the following:

9 from 16
9 from 15
9 from 14
9 from 13
9 from 12
9 from 11
8 from 14
8 from 13
8 from 12
8 from 11
8 from 10
7 from 12
7 from 11
7 from 10
7 from 9
6 from 10
6 from 9
6 from 8
5 from 8
5 from 7

and from these we may without difficulty omit the last one of each column.

No one of the sets should be considered without also considering its reverse, thus:

9 from 16 leaves 7
7 from 16 leaves 9

XXXIX. If the pupils of a class have been taught to measure lengths and distances, give each a square piece of paper or card, the side 1 inch. State all that is necessary about this square; its equal sides and square corners may already be familiar subjects. Draw on the board a rectangle, 9 in. by 2 in.

Ask if any one can find out how many little squares like that in the hand will be required to cover the figure on the board.

A few, perhaps all, will see that the card may be applied again and again to the surface to be measured. Perhaps some one will discover that, having applied it 9 times to the length, a second such application is unnecessary, and that 2 × 9 is the proper number of squares. Give other examples, and if a foot-rule lies at hand, as it should, some one will discover that the length may be measured.

Pass to rectangles of 4 inches width, and some one will at once see that this width is double the former, and that 4 times the length in inches gives the number of squares.

Change to 3 inches, and no measuring is necessary to prove the width.

Teach, without saying, that both width and length may be measured in linear inches, and that the product of the two results is the number of squares in the surface.

XL. The whole set of products may thus be reviewed, and still again, with the idea of diversion in mind.

Nine and nine are how many? Two times nine are how many? Eighteen is how many times nine? Eighteen is how many times two? This hint is sufficient for all the multiples included in the division tables.

Tickets to be used here would contain, as in subtraction, a single digit, and would admit of several answers. They can be used to great advantage.

Let the idea be fully established, that every product is divisible by its factors; that a number once built up may be taken apart.

XLI. Take the odd numbers from 5 to 19. Show how each consists of a pair of equal numbers and one unit.

Ask "How is 17 built up?" *Ans.*—"Two times 8 and 1." Make two rows of squares, eight each, and one above or by itself. Some child may see that 17 is also made of eight 2's and 1. The same squares may then be placed in four rows of four each, with one by itself.

Let pupils experiment with other numbers, as 13, (2 × 6, and 1; 6 × 2, and 1; 3 × 4, and 1; 4 × 3, and 1). Let them try 25, or state how any other number is built up. They should not be confined to this visible representation of numbers by means of squares, but should be led to similar mental constructions, to be followed by statements of the results.

XLII. Name any number, and let a pupil state how it may be built up, it being understood that no factor or remainder greater than nine is to be used, and that a remainder is to be named each time. Let another pupil give a new combination for the same number, and so on, until a new number is given.

TRUE STORIES, AND HOW TO TELL THEM.

BY MRS. SARAH M. WYMAN.

V.

COLUMBUS.—CAUSE AND EFFECT.

Teacher.—Columbus first determined to make a voyage of discovery as early as 1474. Perhaps some of you know the year in which he discovered this continent. [Several answer, "1492."]

T.—How many years, then, after he first determined upon the voyage?

James.—Eighteen years.

T.—Why did he not fit out a vessel and start immediately, he was so sure of finding land?

Lewis.—He hadn't any money.

T.—That is true. Columbus was poor. Would it have taken much money?

Julia.—Oh, yes, ma'am!

John.—He would have wanted men, too, to go with him.

T.—Would it have been easy to find men to go?

Nathan.—No, ma'am.

T.—Why not?

Nathan.—They didn't think Columbus knew.

T.—No, they did not believe in him; and the project of a voyage into the midst of what appeared a boundless sea, to find land, seemed as extravagant to them as it would now to go up in a balloon to find the people of some distant star. A few years before, as early as 1438, the art of printing had been invented. [Let the scholars learn about this in a separate lesson.] Do you think this had anything to do with Columbus's discovery? (All are silent.)

T.—Well, children, it had much to do with it. Let me try and explain how. Until that time, all information about the sea and navigation, and any islands that might have been discovered, was in writing, and the manuscripts were shut up in libraries, and convents, and cathedrals, and only the very learned and very rich people could get at them. But when books were printed, everybody who was interested could procure them. Think how different it would be now, children, if we had nothing but written manuscripts instead of our school-books! And so people came to know more about the islands already discovered, and to think more about the opinions of Columbus and other distinguished navigators. When a scholar reads about anything interesting, what follows?

Lewis.—He thinks about it.

T.—Yes, Lewis. The more we think about what we read, the more we learn from it. About this time, there was also invented an instrument by which the seaman, from the altitude of the sun, could ascertain his distance from the equator. This instrument has since been improved, and is now called the *quadrant.* You will learn more about it when you are older and better able to understand. This invention had great effect upon navigation. Before, the sailor had not dared go far from shore. But now, he might sail boldly into unknown seas, confident of being able to trace his course back by means of this instrument, together with the compass, about which you already know. Thus there came to be an unusual interest in discoveries, which were principally made by the Portuguese. You may find on the map of Africa, Cape Bojador. Where is it, James?

James.—On the coast of Sahara.

T.—In what latitude?

James.—26° north latitude.

T. (*Referring to the map, or tracing the coast-outline on the board.*)—You see it would be but a comparatively short distance to sail from Lisbon to cape Bojador,—along what islands?

Fanny.—Maderia and Canary islands.

T.—The Portuguese had discovered those islands and others in that vicinity, but they fancied that beyond Cape Bojador lay the frightful torrid zone, which they thought was a region of fire, where the waves that beat upon the shore were boiling from the heat of the sun, and that whoever went beyond that cape would never return. Silks, perfumes, and precious stones had been brought from India, first to Egypt and Constantinople, and thence distributed over Europe. You may tell me through what seas and countries they must pass.

Louise.—Through the Arabian Sea, then up the Persian Gulf, and river Euphrates.

T.—Yes; or through what sea to Egypt?

Louise.—Red Sea.

T.—Then on the backs of camels, either to Constantinople or the banks of the Nile, and in a similar way to the different countries of Europe. This makes a long and expensive journey. And so the merchants and great men were trying to find some easier way of getting their beautiful things from India. Can you think of any other way.

Julia.—They might have gone round Cape of Good Hope.

T.—This had been thought of, but no one yet had dared venture so far, being especially afraid of that terrible *torrid zone.* Thus it followed that they more readily listened to the plan of Columbus. You must remember that Columbus had no idea of this vast continent of America, nor of the immense size of the earth. He thought the world was round and expected to find India on the other side, and by a much shorter route than to go around the southern cape of Africa.

Thus, children, you see that the events over which Columbus had no control helped to further his plans of discovery. Had it not been for these, he probably could never have carried out his purposes. God over-ruled this great enterprise, as He does everything in the history of nations. Columbus recognized His hand, as you will come to know when you read and learn more of him.

LESSONS IN DRAWING.

BY MARY D. HICKS.

VI.

DRAWING FROM MEMORY.

Why is it that memory is to be used only in recalling words? A recent article in an educational journal on Perception and Memory-Training, says: "When we wish to instruct little children concerning matters of which they know nothing, the proper mode of appeal to their perception is through the eye; but, on the contrary, when it is necessary for the children to memorize, the appeal should be through the ear. The primary classes should repeat in concert, led by the teacher's voice."

The memorizing here spoken of can refer only to words, and as far as these are concerned, the theory is doubtless correct. But the memory may be trained through the eye in other ways than by memorizing printed words. For instance, it may be used to recall events. A pleasant primary exercise is to elicit from the children what happened on the way to school, thus making a memory and a language-lesson at the same time.

Or the memory may be used to recall form. The children may tell what they pass on the way to school. An object, as a ball, an orange, a cube, a box, used in a previous lesson may be made the subject of a memory-lesson. "Who remembers what we looked at just after school commenced yesterday morning? Who can tell me how it looked? What color was it? What shape was it? Who can draw it?" (or if it was a cube) "Who can draw one of its faces?" Many similar questions will occur to every teacher as means of inducing the action of the memory.

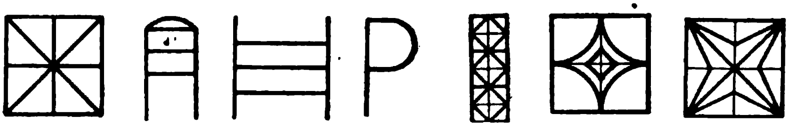
Similarly, figures drawn upon the board may be made the subjects of memory-exercises. It is well, however, to be cautious about attempting too much. The very simplest figures, the square and the circle, should be given at first. The teacher may draw these figures on the board, and after conversation with the children about the figures, may erase them from the board, and ask the children to draw such figures on their slates. By degrees the interval between the time of giving the figure and that of drawing it from memory may be increased. Children may be asked to draw, in the afternoon, some figure which they drew in the morning; and, later on in their course, to draw a figure which they drew the day previous. For a while each memory-exercise in drawing should be prefaced by a little conversation concerning the figure to be drawn. The capabilities of the memory, if properly trained, with regard to form, both of objects and of copies, is very great.

DRAWING FROM DICTATION.

Dictation-exercises are invaluable for cultivating the power of giving attention as well as for fixing the various names and terms used in drawing, in the minds of the children. A good dictation-exercise interests as a well-written story does. The figure is developed line by line, just as the story is told chapter by chapter; the figure remains incomplete and therefore unknown until the final direction given reveals the whole design, just as the final chapter gives the *denouement* of the story.

A few years since I was telling a lady something of the new methods of teaching drawing. In her day drawing had been picture-drawing, and simply an accomplishment, nothing more. She had been a very successful teacher, and although at the time of our conversation she had given up teaching because of increasing years, and dimness of vision amounting almost to total blindness, she was eager to know of all educational progress. I told her, among other things, of dictation-exercises in drawing, and said to her, "I will give you a dictation-lesson." She could not see a line, and wondered what she was to do. But she took her knitting-needle and, as I dictated, drew in the palm of her hand. The figure which I dictated was a simple arrangement in a square. As I gave her the last line she cried, "I see it! I see it!" and seemed to feel that a new sight had been given her. She realized a form which she could not see, and rejoiced in it, asking for exercise after exercise. She also recognized, with the instincts of a teacher, the value of this means of mental development.

The directions for dictation-exercises should be very clear, and should be given slowly, but not so slowly as to allow erasure. A few examples of figures suitable for dictation-exercises in the first primary year are given.



Directions for Dictating the First Figure.—Place a point so that it shall be as far from the left side of the slate as it is from the upper side.—Place a point as far below it as the length of your forefinger.—Draw a vertical line connecting the points.—This is one side of a square.—Place a point for the upper right corner of the square. Remember that it must be as far to the right of the upper end of the vertical as the length of the vertical.—From the upper end of the vertical draw a horizontal to the point just made.—Place a point for the lower right corner of the square. Remember that it must be directly below the right end of the horizontal, and directly opposite the lower end of the vertical.—From the lower end of the vertical draw a horizontal to the point just made.—Complete the square by drawing a vertical,—the right side of the square.—Find the upper left corner of the square.—Find the lower right corner of the square.—Draw an oblique line from the upper left corner to the lower right corner.—Find the upper right corner.—Find the lower left corner.—Draw an oblique line from the upper right corner to the lower left corner.—Find the left side of the square.—Find the center of the left side, and mark it lightly.—Find the right side of the square.—Find the center of the right side, and mark it lightly.—Draw a horizontal line from the center of the left side to the center of the right side.—Give similar directions for the vertical diameter.

Do not weary of being minute in the directions for dictation-exercises. If dictation-exercises are given carefully at first, a good foundation will be laid. As the children gain a knowledge of terms they will be able to understand directions having less detail.

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The Oral Method.—This method, too, is liable to abuse, and is abused where the teacher delivers a lecture to the little folks, and requires them to reproduce it word for word. Where the teacher proceeds in the spirit of an investigator, and propounds questions to the pupils that arouse their interest, and lead to thought and development of classification, he is doing the work of the true educator,—is doing profitable oral work. Our best teachers use largely this method in connection with the text-book method.—*Clark Co.,* (*Ill.*) *Public Schools.*

PRACTICAL LESSONS IN NATURAL HISTORY.

BY MARY D. MC HENRY.

XI.

COLD-BLOODED ANIMALS—FISHES.

We have talked about animals that live on the earth; of others that fly in the air; and still of others that live on the earth or in the water; now we are going to think and talk about those that live only in the water.

How many can tell me the name of this class of animals? "Fishes."

From the previous lesson the children have learned something about gills, but now a full explanation, suited to their capacities, should be given, thus:

All animals breathe; if they stop breathing they will die; now what do they breathe? "Air." Yes, that is right, but do you think fishes breathe air? Probably the answer from some will be, "No; they breathe water." This will open the way for the true statement. The fishes breathe, and they breathe air, but they do not come out of the water to get it, but get it from the water.

This will be a new idea; so dwell upon the facts that water has air mixed with it; that the fish when he drinks water also drinks in air; and that the pretty pink gills are his air-factories, where it is separated from the water.

When we breathe, what becomes of the air? "It goes into our lungs." Yes, and what does it do there? "It changes the dark, impure blood into bright-red, pure blood, which is then carried all over our bodies to make us grow larger, and keep us from wearing out; so, when the fish takes water into its mouth the gills take in the air while the water runs out of the little trap-doors. In the gills the blood is made pure by the air, so that the fish grows larger and keeps well. If you could put a fish into water that had no air in it, the fish would die,—get drowned. If you take a fish out of water it dies for want of air, because the gills cannot take in the air unless they are kept moist.

Can you tell what kind of a covering God has made for the fish? Is it of feathers or fur? "No." Why? cannot you think? It could not swim well, for either of those coverings would make it clumsy and heavy; but how beautifully our Heavenly Father has fitted all his creatures for the places in which they live. The fish has a thin skin, covered with scales overlaping each other and made slippery, so that it can glide easily through the water.

The next time you have fresh fish, notice the shiny skin and the places where the scales were; if you can, see it before they are taken off.

Before having our blackboard lesson, I must tell you another strange thing about the fishes: most of them have a bag, or bladder, which they can fill with air to make them lighter, and when they want to go down they drive out the air and so, growing heavier, sink easily to the bottom of the water.

Has a fish legs, or arms, or feet, or wings? Has it anything in the place of these? Yes; something like wings, called fins; with these it steers through the water, using its tail to row with, like a sculling oar.

We have had such a long lesson to-day, you will have to think and speak quickly as I put the answers on the board.

Proceed as in former lessons, with the following result:

FISHES.

Do	*with*	*Have*	*Live in Water.*	
See	"	Eyes.	NAMES.	
Hear	"	Ears.	Shad.	Gold-fish.
Eat	"	Mouth.	Rock.	Shark.
Swim	"	Fins.	Trout.	Cat-fish.
Breathe	"	Gills.	Sun.	Salmon.

Thus far you can teach children of seven or eight years, and the lessons that follow can be simplified for them.

ARTICULATES.—CLASS I., INSECTS.

Have a number of dead bees, wasps, or better still, butterflies; and after all the children have examined the specimens, begin the lesson by comparing these animals with those they have studied; thus:

You have learned about animals that have backbones and the soft parts of whose bodies are outside. These you hold in your hands have no bones, but are covered with a bony skin; this bony coat is jointed as you see, and all animals of this kind are called Articulates. That is a hard word for you to learn, but once learned you will not easily forget it. The word comes from *artus*, meaning a joint. There are four kinds of Articulates, or animals with jointed coverings, but to-day we will talk only of the first class.

"Into how many parts is the bee's body divided?" "Three." "Right; now examine the wasp. Has it the same number of divisions?" "Yes." "Count the legs of each." "Three on one side, and three on the other; that makes six." "Now, how do you think these little creatures breathe? With gills?" "No." "Why not?" "Because they do not live in the water." "Right; well, then, how do they breathe,—with lungs?" Of course the children will not know this; so teach them that these animals breathe through little holes called pores, all over their bodies. When they eat, their jaws move side-ways; and the little hairs you see by the mouths are feelers, helping them to search for food.

Look at this butterfly,—notice its pretty wings; this was not always so lovely; once it was an ugly worm called a grub, and crawled on the earth; by-and-by it changed into this beautiful shape. Next time I will tell you more about how it changes; but for this lesson remember that the first class of Articulates is called Insects; that

Insects have three parts to their bodies.
Insects have feelers.
Insects have six legs.
Insects breathe through pores.
Insects change their form.
Insect's jaws move sideways.

This can be placed on the board for the children to copy, also a list of insects; or if able, let them make out their own lists. The following will be familiar.

Bees.
Beetle.
Wasps.
Flies.
Fleas.
Crickets.
Grasshoppers.
Mosquitoes.

ELEMENTARY INSTRUCTION IN MUSIC.*

BY H. S. PERKINS.

It is presumed that teachers of singing have received "suggestions" and "hints" previous to entering upon the duties and assuming the responsibilities of a teacher. If not, the Board of Education or School Committee has made a mistake, and so has the would-be teacher.

The pupils during the first year of school do not need a singing-book, only for rote songs. They should be taught orally. The written illustrations and easy exercises in note-reading should be placed upon the blackboard. The teacher should give a good vocal example, with purity of voice, clearness of utterance, and simplicity of manner.

We earnestly exhort not only the regular singing-teacher, who gives the lesson, but the regular school-teacher, who exercises the pupils upon the lesson daily, to give close attention to the *radical vowel sound* in every syllable and word; also to the proper degree of force, as well as time, which consonant elements demand, that the pronunciation may be pure and *natural*,—yes, CORRECT. Language should not be annihilated nor mutilated when wedded to music. The two individual parts,—music and language,—should be approximately correct; then the union of the two will be perfect in the same ratio. There should be no doubt as to the correct pronunciation in singing, for it is the same as the best models in speaking. Teachers who are in doubt can ascertain by reference to "Webster" or "Worcester" as a rule. The short ĭ, short ĕ, or obscure sound of any letter should be clearly defined.

* From *The Song Wave* published by D. Appleton & Co. New York.

Final letters should not be allowed to "telescope" over the following word. This is a very common error. The most troublesome letters are s, t, d, n, and ch. They need close watching.

The teacher is expected to supplement the printed lessons with additional illustrations and exercises. He should not allow his powers and faculties of invention, so to speak, to fall into disuse and become enfeebled because he has a *text-book.*

The "HAND INDICATOR" may be used extensively in all of the grades, not only to first illustrate relative pitch and to develop simple melodies, but to introduce exercises in two and three parts.

The "MUSICAL LADDER" can be used in a similar way with very great success. It should be drawn upon the blackboard, the *long steps* being three inches, and the *short steps* an inch and a half, and figured, etc., as may be necessary during the different stages of progress. Use one pointer for a simple melodic exercise, and two pointers for two-part exercises. The "MODULATOR" should also be drawn upon the blackboard. This diagram will greatly aid the pupil to appreciate key-relation, change of key, transposition, etc.

The first exercises are written without the Clef to practically illustrate the *flexibility of scale position* in regard to its representation upon the staff. There being no *Clef,* or Signature, there is no restriction. This practically teaches *transposition*, and that it is just as "*natural*" to commence at one point as any other, or (to use language more fitting as we pass on) to *sing in one key as another.* In addition to this the pupils will have to memorize the signature, or sign, for commencing, or basing ONE at a particular point, line, or space. Until the letters or pitch-names are learned, it will be sufficient to say that: "The signature is one sharp, therefore ONE or Do is upon the second line," or should be expressed upon that degree, etc. From large experience in public-school teaching, as well as from observation in our largest cities, where singing is taught the most successfully, the writer concludes that the signature, letters, various kinds of notes and measures, and intervals, even, may be taught successfully in the primary grades, yet the time for introducing these special topics is left to the good judgment of the teacher.

It is believed that the most rapid and substantial progress and development are made when the art and science, practice and theory, sentiment and technic are happily wedded in a course of musical instruction.

Rote singing is good; *Solfeggio* exercises are useful; *Note* singing is indispensable; attention to breathing, phrasing, and expression; memorizing technical terms, expressions, and useful facts,—such as the scale, intervals, staff, clefs, letters (pitch names), signature, key, measure, accent, time, etc.,—all are essential.

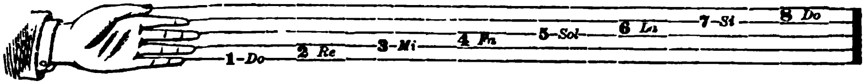
Very soon after the pupils have gained a practical knowledge of intervals, they should learn key-relationship, change of key, and simple modulation. Not only should the eye be familiar with the signs which suggest or indicate the *change of key*, or the various keys, but the ear also.

The *melodic* effect of this change of key should be learned directly following the study of one and two-part exercises and songs, and the *harmonic* effect after three-part songs have been practiced.

Teach your pupils to appreciate the *change of key*, whenever and wherever it takes place. They should *know* in what key the music begins and continues throughout the composition; also, *think* as well as to *sing* in the proper key, even if the *change* is only temporary. If this is done, pupils will not *trip* and *stumble* at the *sight* of a *chromatic*: — sharp (♯), flat (♭), or natural (♮). The *thinking* should precede the *doing*. The reasoning powers should be brought into action, and the problem solved mentally before "drawing the conclusion." Singers, — beginners even, — should never "jump at a conclusion." They should learn to sing at *first* sight, and not depend upon "instinct," or "intuition." Alto singers too often fall into the habit of following a melody either a *third* or *sixth* below. Such young persons are called "natural alto singers." The *talent* should not be encouraged. The habit should never be contracted. To prevent it, the alto singer or singers should alternate with the soprano in all exercises and songs within the range of their voices.

The first and constant object of the teacher should be to make the instruction plain, clear, and progressive: also, to *lead* the pupils along, step by step, until the difficulties have been overcome. The teacher who is under the necessity of following literally *any book* will fail, or meet with indifferent success. Impress the mind of the pupil that it is not a difficult task to learn to *read music*. Demonstrate it. If successful in this particular, the greatest obstruction has been removed, and you are in a fair way to accomplish your good purpose. Never tell a pupil or child, "You have no talent for this or that." One means which the writer has often tried and made very successful, even in the outset, or as soon as the scale has been well learned, is as follows: Let eight books, eight objects in the room, or eight figures or marks upon the blackboard, be placed before the pupils, each object representing a tone of the scale, distinctly understood. The teacher then has in mind some old tune familiar to all, as "Greenville," "Boylston," "Dundee," etc., and requests the class to sing the tones represented by the objects to which he points; the teacher, of course, selecting that succession of tones in their order and duration which makes the tune that he desires to have sung. The pupils will readily discover that they have *sung a tune by note!* The words may also be applied. It will be a good exercise to repeat and ask the pupils to designate upon which degree of the staff each tone should be represented provided the staff and its object has been explained. Children should seldom sing as *loud as they can*, and never be allowed to *scream*. They should frequently sing very softly, and generally with no more than medium volume.

The Hand Indicator may be used successfully and more conveniently in the first steps to introduce tones, to illustrate *singing at sight*, or from objects, as suggested by the following:



THE PRIMARY TEACHER will not be issued in July or August, ten numbers constituting the volume. Bound volumes of Volume V. will be ready by the first of July. Price $1.25. Address, New England Publishing Co., 16 Hawley street, Boston.

EDITORIAL.

The present number closes the fifth volume of THE TEACHER. Our aim and purpose has been, during the past five years, to elevate and improve the methods of primary instruction by furnishing suggestions and practical lessons upon the several branches taught in the elementary schools of the country. We acknowledge gratefully our obligations to our contributors, who are recognized as among the most successful practical teachers of the land. Our readers have generously shown their appreciation of the TEACHER by their coöperation and support. It is not possible to emphasize too strongly the importance of good work in the primary schools. Here should be laid the foundation of a substantial and systematic training. Our aim will be to present in the future the true philosophy of elementary instruction, and the correct ideas of child-discipline and school-management, by presenting methods that have stood the test of experience by those who have been eminently successful in this most important of all departments of instruction. We have the promise of the ablest and wisest of American teachers as contributors in the future. The first number of Vol. VI. will be issued Sept. 1, 1882, and we sincerely hope to render our patrons, now numbered by thousands in all parts of the country, better service than we have in the past. As the time for the long vacation approaches, we hope that our contributors, patrons, and friends will all richly enjoy the well-earned rest that awaits them. May we all gather new strength of body and mind for the work to be resumed in the coming autumn.

In closing our editorial work for the fifth volume of THE TEACHER we desire to say a final word about the *reading* of teachers, and their responsibility in the matter of influencing their pupils to read useful and helpful books. The idea of deriving the larger part of mental discipline from the schools is distinctively an American notion, and a careful observation of the results obtained lead us to feel that there is danger of relying too much upon the routine work of the schools for culture. Teachers need the broader culture which comes from reading the best books by the keenest minds in literature, philosophy, and science, in addition to their professional culture. They should remember that the main object of reading and study is discipline in the processes of reasoning, of judging, of comparison, and in the development of the imagination, rather than the accumulation of knowledge. Gibbon, a great reader, said "We should attend, not so much to the order of our books as of our thoughts." "The perusal of a good book gives birth to ideas." This suggests the vital point. Books are valuable for the *ideas they start in the mind*, not for what they put there as acquisitions. We desire to suggest that our teachers should seek such aids as are furnished by President Porter in his valuable work on *Books and Reading*, in order that they may gain the best help from reading with the least waste of mental and moral forces. We respectfully suggest that teachers make for themselves such a selection of books, for their own reading during the coming vacation, as will refresh and quicken their mental perceptions. Pupils should be advised about their reading, and all vicious and worthless books should be discountenanced. Omniverous reading is unproductive of good results. The most useless of men are those that are known as "book worms." A few good books, selected with care by teachers and recommended to pupils, will do much toward fostering a love of good and inspiring reading during the period of release from regular school-work. They should be adapted to the age, physical condition, and power of mental appropriation of the children.

THE SUMMER REST.

We are looking forward to our vacation weeks with, perhaps, vague anticipations of delight and freedom. Are we questioning how to spend them? A hundred projects may tempt us before we can decide, or before it is revealed, how it shall be decided for us. But however and wherever the Summer mornings and evenings shall lap our weary nerves and brains, it is safe to say that we look most of all to external nature for our rest. Congenial companionships, affectional repose, the atmosphere of home, a reprieve from daily routine, the letting slip our official robes, the relief from direct efforts of will and thought; all these are elements in that rest; but with these in prospect, we long yet the more for that return to the sympathy of the air, the water, and the pleasant fields or mountains which is our instinctive refreshment. With the touch of mother-earth our strength is renewed with the lullaby of its ocean-tides we are soothed, in the flow of its magnetic currents we find the poise of our being. We must sit down in the July woods; we must lose ourselves in the realm of the universal Pan, and sacrifice at his alter, till

> "Our soul into the boughs doth glide,
> There like a bird it sits and sings,
> And flaps and claps its silver wings."

If circumstances do not favor us, and we are necessarily limited in our access to these balms, we need not despair. We can linger even by one spruce-tree, and, in the deep shade of its sweeping branches and the play of the winds among its vibrating needles, we can give ourselves up to imagination till the world is sylvan for us and we become a part of the unconscious perfection of the Summer. Ah! this is rest; to be absorbed into the heart of nature, to feel our kinship with the elements, to pulsate in the rhythm of the universe, and forget the littleness and wearisomeness of egoism. We get this beautiful and radical relaxation by the sea, amid the hills, communing alone with the universal spirit, letting our souls breathe with full and free inspirations, Then the clods of care fall off; then the cage is open and we no longer beat against the bars. With a little baby in our arms we feel this sympathetic repose, for the child that is to us not a pupil, but a fresh revelation of God, comes like God to the spirit; banished are all selfish conceits, all concentrated determinations, all forceful personal impulses that continually jade us in the intense tendencies of our professional effort, and we are left serene, content, and at peace with ourselves and heaven, as nature and childhood always leave us when we are passive before them. We are at rest, and in the quiet bliss of a restoring sleep; just as a child, whose crises of fever is past, closes his eyelids at last, not to die, but to enter once more into its natural and healthful relations with life and happiness.

So may vacation bring us to our true selves, and bring to us the uplifting and restful influences which the Summer has in store for the weary and believing child of nature.

Lesson on Kindness to Animals.

LESSON IX.—ANECDOTES.[*]

[To be read to pupils by Primary Teachers.]

"A man of kindness to his beast is kind,
But brutal actions show a brutal mind:
Remember *He* who made thee, made the brute;
Who gave *thee* speech and reason formed *him* mute.
He can't complain, but God's all-seeing eye
Beholds *thy* cruelty, and hears *his* cry,
He was designed the servant, not the drudge:
And know that *his* creator is *thy* judge."
—*Anon.*

"He prayeth best who loveth best
All things, both great and small:
For the dear God who loveth us,
He made, and loveth all."
—*Coleridge.*

A teacher of a large public school in England has, during many years, been carefully teaching the children in his school kindness to animals,—to feed the birds, and pat the horses, and enjoy making all God's harmless creatures happy; and he now tells us that out of about seven thousand children that have gone out from his school, not one has ever been charged with a criminal offence in any court.

A celebrated French teacher (M. DeSailly) has been teaching the children in his school, ever since 1851, kindness to animals. He says it has had the best influence on their lives and characters. He has found them "Not only more kind to animals, but more gentle and affectionate toward each other," and he hopes that principles of kindness to animals will soon be taught in every school. In more than five thousand French schools regular lessons are now given the children on this subject, and as I have before said in these papers, hundreds, perhaps thousands, of societies of children have been formed in the schools of England, France, and other countries, to protect animals from cruelty. Out of about two thousand criminals in American prisons, inquired of on the subject, it was found that only twelve had any pet animal during their childhood.

About six hundred prizes are now given every year to the scholars in English schools who write the best compositions on kindness to animals. They have been presented to these scholars by the daughters of the Queen, and other distinguished persons, in the presence of large audiences, numbering at one time nearly ten thousand people. And I was glad to read, the other day, what two brave English boys did to prevent cruelty to a cat which three wicked boys, or *hoodlums*, had stolen, and having tied a string to her neck, were, for fun, throwing her into a broad ditch of water and then dragging her out.

These two brave boys were smaller than the hoodlums, and they offered to give all the money they both had,—about a shilling,—if they would let the cat go, but the hoodlums only laughed at them and refused.

Finding there was no other way to save the cat, they both suddenly rushed on the big hoodlum and pitched him into the ditch where he had been throwing the cat; then they rushed with such force at the one who was holding the cat that he dropped her; then they rushed at the third one, and he ran away; and then they picked up the cat and ran away themselves before the hoodlums could get ready to follow. It was a brave battle, fought against great odds, for the prevention of cruelty to animals, and I think the boys who did it deserve to be made knights of the "Legion of Honor" as much as any man who ever fought on battle-field.

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[*] By **Geo. T. Angell**, Esq., President of the Mass. Society for the Prevention of Cruelty to Animals.

I read another good story the other day, about a distinguished clergyman of Massachusetts, known throughout the Nation as a great and good man. It is about one of the experiences of his childhood, and I will tell it in his own words. He says, "I saw one day a little spotted turtle sunning itself in the shallow water, and I lifted the stick in my hand to kill it, for, though I had never killed any creature, I had seen other boys kill birds, squirrels, and the like, and I had a disposition to follow their wicked example, but all at once something checked my little arm, and a voice within me said, clear and loud, '*It is wrong*,' and so I held my uplifted stick until the turtle vanished from my sight. Then I went home and told the tale to my mother, and asked her what it was that told me it was wrong. She wiped a tear from her eye and took me in her arms and said, '*Some call it conscience, but I call it the voice of God in the human soul.* If you listen to it and obey it, then it it will speak clearer and clearer, and always guide you right. But if you do not listen to it, or disobey it, then it will fade out, little by little, and leave you in the dark without a guide. Your life, my child, depends on heeding that little voice.' "

The celebrated Dr. Channing writes in one of his books, "I would not crush the meanest (harmless) insect that crawls upon the ground. It has the same right to life that I have. It received it from the same Father, and I will not harm the works of God by wanton cruelty."

In my parlor I have a beautiful picture; a hunter, with bow and arrow, about to shoot a mountain deer that stands unconscious of his danger,—but suddenly, behind the deer, appears in the mist the dim but gigantic form of the Spirit of the Mountains, with uplifted hands. The terrified hunter drops his bow and spares the life he could not restore. Remember, children, whenever you may be tempted to take without cause the innocent life of any creature, that there is present, everywhere, that great and pure Spirit upon whose mercy you depend, and who knows every wrong you may inflict on the humblest of his creatures. Protect the weak, relieve the suffering, make the world happier that you have lived in it, and you will be happier yourselves in this life, and better prepared for life immortal.

SOME QUESTIONS.

[Others to be added by teacher.]

Who can recite the first piece of poetry?

Who can recite the second?

What is said about a large public school in England?

What is said about a French school?

What about lessons on kindness to animals, in French schools?

What about societies of children in England, France, and other countries?

What is said about criminals in American prisons?

What about prizes given in English schools?

What can you tell about two brave English boys?

What about a distinguished clergyman of Massachusetts?

What did the celebrated Doctor Channing write?

What can you tell about the pictur of the hunter and the Spirit of the Mountains?

OUR NOTE-BOOK.

AT TWILIGHT.

BY MRS. SARAH M. WYMAN.

Gold and azure in the sky,
Dusky shadows flitting by;
All about my easy chair,
Golden curls and auburn hair,
Eyes where gentians took their hue
When they made their fingers blue.
Little fingers in my hand,
Little feet on tip-toe stand,
Round my neck soft arms entwine,
Rosebud lips are pressed to mine.

Lights are brought,—the spell is broken!
Be the heart-throbs all unspoken!
Let my longings wait awhile,
Till the dear ones, free from guile,
And their lives, intenser grown,
Bless other lives in their own,—
Till a whispered song of praise
Crowns the hopes of by-gone days,—
Till this life shall calmly blend
With the life that hath no end;
And around me ever be,
Faces, twilights bring to me.

SPELLING.

BY MRS. A. D. MORRILL, DES MOINES, IOWA.

"How shall I teach spelling?" This was a question a teacher of a primary school asked herself over and over again. She eagerly and patiently read the articles on the subject in all the best educational papers, but, alas! no help was gained from them. One said, the best and most practical way to teach spelling was to let the children copy; and in this way they would learn orthography and punctuation.

Another advocated written language lessons of various kinds, in which the children must use words to express their thoughts. Both these methods she was faithfully applying; also, the *orthodox spelling-lessons* taken from the best spelling-books, written in recitation, together with careful drill on mis-spelled words. And yet the result was far from satisfactory. The pupils continued to mis-spell the most common words, and to complain of the monotony of the spelling-lessons, although the meaning of each word was fully explained before the class was required to learn them. This, she felt was but the natural result of a false method, and she resolved that she would strive most earnestly to achieve better results with the younger class.

She noticed that children enjoyed committing poetry, and always seemed to feel a pride in reciting a piece when once committed. Why not make use of this in teaching spelling, and at the same time store the young minds with gems from the best poets while cultivating that much-neglected gift, memory.

This class had been taught to read by the method originated by Prof. G. L. Farman, and were given language-lessons when they commenced the Supplementary First Reader. The words asked for by the class, while writing their language-lessons, were written on the board for a spelling-lesson. When they entered the Second Reader they were given a verse or two of a poem to commit, being instructed to pay particular attention to the lines, capitals, and punctuation-marks. When time for recitation came the children took their slates, and wrote the verse without referring to the book or being prompted by the teacher.

A perfect lesson was one that was written correctly in every particular.

It often happened that children who had not had the same training when learning to read, or in language-lessons, had to be encouraged in their first few efforts to prepare and write this lesson; but they soon learned to love the exercise, and do the work alone. The writing of the lesson was supplemented by oral recitation in reading-class, and a talk on the life of the author. The whole poem, after being learned, verse by verse, was finally reviewed as a whole, with the principal points of the life of the author.

In this way the class made a good number of the best poems of childhood their own, and knew something of the best writers; also had acquired a taste for literature. But what was the result? you ask. This class was required to write an original exercise each day, and seldom mis-spelled a word, while the teachers of the higher departments were continually vexed with the errors made by the older pupils in writing the most common words.

GLEANINGS.

THE KINDERGARTEN is the latest development of the educational problem. It cannot be regarded simply as an improved way of imparting the elementary school education, for it is a complete departure from the old aims and methods. It seeks more to stimulate the self-activity of the child, and so to develop its physical, intellectual, and moral powers, than to store the memory with any of the acquired knowledge of the past. In this training of the faculties, music is found to be an indispensable aid, and from the first has been largely used, although generally in an unsatisfactory way.—*Mr. Batchellor, Boston.*

CHILDREN are not ciphers or minus quantities. It is a mistake to suppose they have only negative qualities; that they are so much wax or white paper to take an inscription or impression. Very positive are their traits; what excellent judges of character! how hard to persuade them to favor, or go to, or salute them whose countenance and look stirs their distrust and wounds their so-delicate sensibilities! I prize their good opinion, and I fear their criticism more than that of great men or the daily press!

Hear and hearken to the children! What imitative creatures! Let us, in one way at least, imitate them; namely, in their *anticipations*,—so vast and without end,—not *comparatively* satisfied in the little ones, with a doll, hoop, drum, gun, dog, pussy-cat, pony, canary-bird, which are all but tokens and shadows of an infinite desire, yet causes and occasion of a wonderful joy. For children, even in dirt and rags, though sometimes hurt or hungry, are happy,—not sad,—and when the poet Tennyson writes that we are all but

"Children in the night,—
"But children crying for light,
"And with no language but a cry,"

his figure expresses but a small, poor, one-sided fraction of the human story,—which is "glad tidings" on the whole; and childhood is the everlasting type and the real gospel,—always preached under the joyful sun!—*Dr. Bartol, Boston.*

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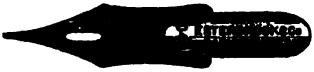

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